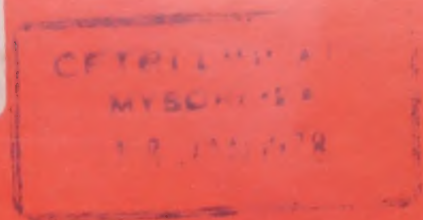


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University News



Special Science Congress Number

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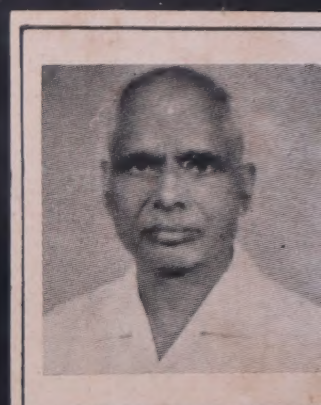
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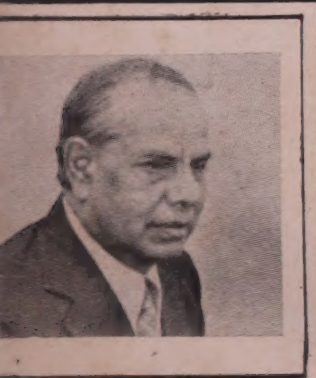
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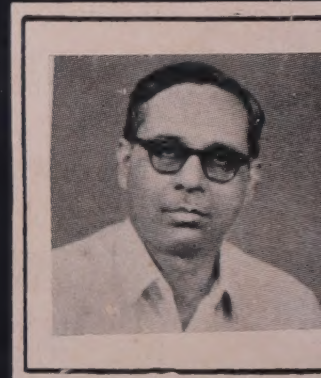
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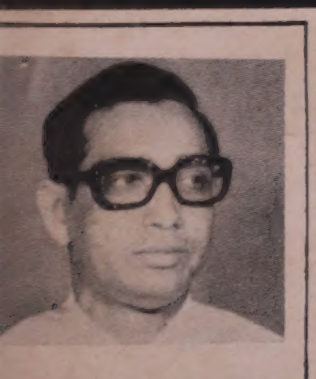
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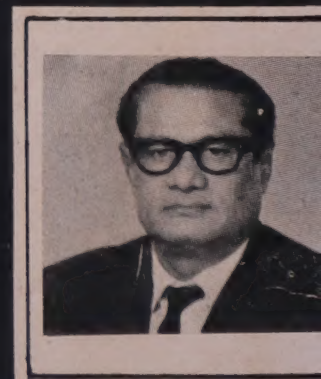
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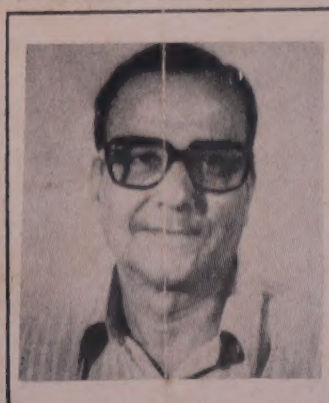
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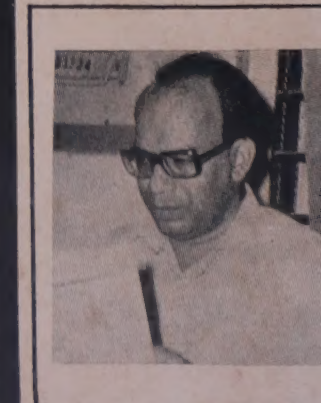
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SHRI A.B. DAS GUPTA



PROF. S.V. KALE



DR. JOGABRATA RAY

CLASSIFIED ADVERTISEMENTS

**RAVISHANKAR UNIVERSITY
RAIPUR 492-002**

Employment Notification No. 4/77

The following vacancies in the teaching departments of the University are readvertised with revised qualifications. Those who had applied in response to earlier advertisements No. 1/77 and 2/77 need not apply again. They are however advised to intimate the change, if any, in their qualifications or postal address, giving full particulars of the post they had applied for.

2. Applications must reach the Registrar's Office on or before 18.1.1978.

At least 50% marks at the Bachelor's Degree exam., on the basis of which division is awarded at the degree level by the University; and (iii) At least 50% marks at the Higher Secondary/Intermediate/Pre-University examination, as the case may be;

(c) Experience: (1) For Professors: at least 10 years experience of teaching post-graduate classes; For Readers: at least 5 years post-graduate teaching; and (ii) In case of Professors: evidence of candidates having been awarded a Doctor's degree under his supervision and in the case of Readers at least 3 years experience of guiding research.

relax any of the qualifications prescribed in (b)

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person from the following categories may be appointed:

Category-A

(i) A 2nd class Master's degree in a relevant subject with atleast 50% marks (B in the seven point scale); and (While taking into account the marks/grade the marks/grade obtained in internal assessment, if any, shall be excluded); and (ii) 2 years' experience of research work or practical experience in research laboratory/research organisation; and (iii) Atleast 50% marks at the Bachelor's degree examination; and (iv) Atleast 50% marks at the Higher Secondary/Intermediate/Pre-University examination, as the case may be.

OR

Category-B

(i) A Master's degree with first class or Grade 'A' in a relevant subject; and (ii) Atleast 50% marks at the Bachelor's degree examination on the basis of which division is awarded by the University; and (iii) At least 50% marks at the Higher Secondary/Intermediate/Pre-University examination as the case may be.

Provided further that if a candidate from the above two categories is selected, he will have to obtain a Doctor's degree/M. Phil degree or have to his credit published research work of equivalent standard within 5 years of his appointment, failing which he will not earn future increments until he fulfills these requirements.

5. The requirement regarding minimum percentage of marks shall be relaxed upto 5% in case of Scheduled Castes/Scheduled Tribes candidates. Fifteen percent of the posts in each department are reserved for the candidates belonging to scheduled castes and 18% for the Scheduled Tribes candidates.

6. General

(i) Contributory Provident Fund, dearness and other allowances and benefits are available as per University Rules. Higher initial salary in the scale may be considered in case of exceptionally qualified and deserving candidates. (ii) Candidates in employment must submit their applications through proper channel. Applicants called for interview will have to bear their own expenses. (iii) The University reserves the right not to fill any post without assigning any reason thereof. (iv) Applications should be made on prescribed form (seven copies) obtainable from the Registrar on payment of Rs. 5/- in cash or by Crossed Bank Draft, alongwith a self-addressed envelope (23 x 11 cm.) bearing postal stamps worth Rs. 1.20 for recorded delivery.

**H.N. Shukla
REGISTRAR**

I. Professors	No. of Posts	Specialisation
(i) Bio-Sciences	One	Organismal Physiology, Environmental Biology, Microbiology, Bio-Physics or Bio-Chemistry.
(ii) Economics	One	Growth and Development.
(iii) Linguistics	One	Open (Phonemics & Phonetics: Desirable.).
(iv) Statistics	One	
II. Readers		
(i) Anthropology	One	Social Anthropology.
(ii) Bio-Sciences	One	Organismal Physiology, Environmental Biology, Microbiology, Bio-Physics or Bio-Chemistry.
(iii) Chemistry	One	Analytical (Knowledge of Chemical Analysis of Environments Instrumental method: Desirable.)
(iv) History	One	Modern Indian History.
(v) Physics	One	Solid State Physics.
(vi) Psychology	One	Industrial.
(vii) Sociology	Two	(i) Industrial. (ii) Inter-disciplinary—Research work on Indian Society and traditional culture.
(viii) Geography	One	Geography of Resources/Regional Planning, Land Utilisation.
III. Lecturers		
(i) Anthropology	One	Physical Anthropology.
(ii) Bio-Sciences	Two	Cytogenetics, Cell Physiology or Bio-Chemistry.
(iii) Chemistry	One	Open
(iv) Geography	One	Open
(v) History	One	Modern Indian History.
(vi) Mathematics	One	
(vii) Statistics	One	

3. Scales of Pay:

Professor: Rs. 1300-50-1500-75-1800-100-2000/-.

Reader: Rs. 1100-50-1600/-.

Lecturer: Rs. 620-40-900-50-1400/-.

4. Qualifications for Professors & Readers:

(a) A Doctor's degree or published work of an equivalent high standard; and

(b) (i) A second class Master's degree in a relevant subject with atleast 50% marks (Grade B in the seven point scale) or an equivalent degree of a foreign University; and (While taking into account the marks/grade, the marks/grade obtained in internal assessment, if any, shall be excluded), (ii)

Provided that if the Selection Committee is of the view that the research work of a candidate as evident from his thesis or from his published research work is of a very high standard, it may relax any of the qualifications prescribed in (b) above.

5. Qualifications for Lecturers:

(a) and (b): Same as for Professors and Readers.

Having regard to the need for developing inter-disciplinary programmes the degree in (a) and (b) (i) may be in relevant subjects.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may

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*Opinions expressed in the articles
and reviews are individual and do
not necessarily reflect the policies
of the Association*

Hony. Editor : ANJNI KUMAR

Science & Technology in the Future of India

Science and technology are like a couple of spirited horses. They are useful, even necessary, to travel to a desired future. They have not only to be harnessed, but also to be kept fully under control and mutually co-operative, otherwise they can gallop in all directions and to little purpose. The entire gamut of science and technology today have impact on large sectors of human and social activity. Science and technology have their separate histories. While science developed out of the curiosity of man about his own environment and his desire to find principles which govern natural phenomena, technology has a more ancient history embedded in the opposable thumb of man, the development of his manual skills and mastery over the materials of his environment. It is only in the last 200 years or less, that science and technology have begun to contribute to each other and been able to develop a mutually sustaining relationship.

Indian society has a long history of technology. From the ancient copper and bronze artefacts of

Text of the key-note address delivered by
Dr. B. D. Nag Chaudhuri, Vice-Chancellor,
Jawaharlal Nehru University, at a Seminar on
Science and Society held in New Delhi
recently.

Mohen-jo Daro to fine muslin and contemporary spun silk, jewellery and metal working there is a continuity of technology. There are periods of technological efflorescence and decadence in the history of subcontinental technology. Science, however, as is now understood, is quite recent in India, about a hundred years or less. There are, however, scientific efforts of a sort in the ancient and medieval times in astronomy, medicine and chemistry. These efforts were limited to a very few people and had very little effect in the society of those times. One major contribution was in astronomy in celestial observation of planets and stars and the construction of composite solar and lunar calendars. Another important contribution was the empirical knowledge of the medicinal properties of certain plants and minerals. There were contributions in arithmetic and algebra including the decimal system and the use of zero.

The early years of contemporary Indian science were mainly sporadic efforts of gifted individuals, who became conscious of the importance and the power of scientific thought. They followed the dictum Science for its own sake, more or less in the rein of ancient philosophers who sought to understand Nature through philosophical prescriptions. Their interest in technology was feeble. There was no particular effort to bring science and technology close to

each other. If science was useful it was only incidental to the main growth and objectives of science.

The concept that Science could be deliberately used to the advantage of society, could be harnessed to social ends, were first articulated after the first World War but basically have spread since Independence. In the last 30 years of Independence, the growth of science has been phenomenal. India ranks today third in the scientific manpower and seventh or eighth in the generation of scientific knowledge. This large growth was in the great measure due to the substantial investments in science made by the Government of India during the successive Plan periods. This growth has been almost a hundred-fold since before Independence and now amount to nearly 300 crores of rupees a year. This rapid expansion has not been without its problems. On one side this large expansion of manpower has brought about problems of unemployment and questions about the quality of scientists and their training. On the other side there is an acute consciousness by both scientists and government that there is need to justify such large expenditures through harnessing science to socially useful purposes and solving some of the acute problems of our society. There is a recognition that India is a crowded country of our 600 million people and with limited natural resources. If science and technology cannot be married successfully in the country and if science and technology together fail to provide solutions to acute social problems such as energy, food, population transport shelter and the management of natural resources, then the justification for such large scientific manpower and the large expenditure on science and technology become questionable. The crucial problems of the country which are amenable to scientific attack must be the concern of scientists in the country. This will enable science to receive patronage from Government and scientists to be useful to the society in which they live.

Let us take energy, for example, which is the subject matter of discussion in one of the sessions of this seminar. We are fortunate that we have some coal, a little petroleum and uranium. These are the non-renewable sources of energy. We can only use them once. Have we any responsibility to conserve them for posterity. There are others like the sun, the tides, the heat of the interior of the earth which are in terms of the human race, long lasting and we call them renewable or permanent resources. We use a little solar energy, some of which we use in the form of hydro-electricity in the country. Some solar energy however goes into plants. A great deal goes waste.

Coal and petroleum are not only sources of energy, they are also sources of various necessary chemicals such as polymers, paints, drugs and fertilizers. If petroleum is exhausted, it will not only be the end of a source of energy, but will also be the end of a source of valuable and useful things like fertilizers, drugs and fabrics. The problem, therefore, is not only to find more resources by scientific exploration of our territory, but also to clearly develop policies for their conservation and use in the most appropriate manner because once they are exhausted, there will be no more of it and our grandchildren will pass

judgements on our improvidence, stupidity and selfishness. Even as we discover more quantities of coal and petroleum and try to mine them by developing new scientific methods and related technologies, it will be neither cheaper nor easier. In the perspective of the future, energy is going to be expensive. It will require greater efforts towards efficiency and greater ingenuity to make the best use of it. In addition, social discipline will be required in increasing measure to use energy effectively, efficiently and judiciously.

There is a great deal of talk about nuclear energy. The use of nuclear energy of uranium fission without breeding is wasteful. It is inevitable that breeder reactors using uranium and eventually thorium will increase, and finally supplant the conventional reactors which we now use. The use of breeder reactors with their greater hazards and higher radioactive waste output will require tremendous discipline in management of these reactors and the dangerous radioactive wastes that will be produced. It will also mean that society will have to live with the greater hazards of this new source of energy. Fusion is another exciting possibility being investigated quite energetically during the last 25 years. It has seemed almost achievable several times in the past. However, the scientific problems are still far from resolved and techno-economically it still has a mirage like aspect.

This brings me to the need of all of us to understand the nature of science. Many philosophers have explored the nature of science from Marx to Monod, in their own ways. Perhaps no one has carried out this analysis and enunciated his views as clearly as Karl Popper. He has exposed the essentially step by step process of science through a critical feed-back process of successive adjustments. This evolutionary view of science is not just a record of past errors but should be taken as a running arguments, a chain of linked problems and their tentative solutions. A consequence of this view is that science proceeds from problems which really are problems, problems which one has actually come across and tried to solve for oneself. It, therefore, includes a commitment to work and a claim to what has been called by the existential philosophers 'authenticity'. A scientific problem to be authentic, in this sense, must include not only intellectual interests, but an emotional involvement, the meeting of a felt need of man, individual and societal.

This undogmatic view places a premium on the boldness of imagination—it holds that we never actually 'know' and that there is always the unforeseeable possibility of radical changes of the whole conceptual scheme with which one is working, even while one is operating with it. In this way of looking at view things, there are no two cultures: one scientific and the other aesthetic; or one rational and the other irrational. There is only one culture and the scientists and the artist far from being engaged in compatible activities are both trying to extend human understanding by the use of creative imagination subject to critical controls. Both are using irrational as well as rational faculties. Both are exploring the unknown and trying to articulate the search and its findings.

Even if it were possible for any man to begin from the beginning, he would not get very far, no further than primitive man. Before we as individuals are even conscious of our existence, we have been profoundly influenced by our relationships to other individuals. Even before our birth we are subject to a complex history and by the time we are able to make conscious choices, we are already taking views of categories in a language which has reached a particular degree of development and complexity through the lives of many generations of human beings before us.

The notion that one can begin anything absolutely free from the past is entirely false. In scientific affairs we do not take even our own observations as certain until we and others have repeated and tested them. It is in these respects and through such processes that science develops a certain objectivity which inhabits the public domain and not in the private state of mind of an individual. Its acceptance as knowledge and its value and usefulness is independent of whether there is anyone who claims to know it in the subjective sense. Knowledge in the objective sense is knowledge without a knower. This view breaks from the tradition of European science that can be traced back to Aristotle—the tradition of common theory or knowledge. In Popper's words "I am a great admirer of commonsense which, I assert, is essentially self-critical. But while I am prepared to uphold to the last, the essential truth of commonsense realism, I regard the commonsense theory of knowledge as a subjective blunder. This blunder has dominated Western philosophy. I have made an attempt to eradicate it and to replace it by an objective theory of essentially conjectural knowledge." Knowledge is thus always tentative, never final. The use of knowledge is itself an extension of knowledge, making it relevant and practical, at the same time providing the basis for new problems. This view then leads to reducing the sharpness of boundaries of science and technology. The demarcation between science and technology tends to dissolve and reappear as knowledge and experience expands.

It is in this context that we seek to extend our knowledge and its use whether cells, or genes, fission or fusion, never knowing what the next step will reveal. Yet every advance of knowledge, every step taken to use it makes our knowledge firmer, even though advances are quite often unexpected and make it necessary for us to restructure our conceptual framework. Thus going back to thermonuclear fusion we will never know whether it will be possible in the laboratory or to use it till we have actually done it. It may be a good conjecture that fusion is feasible and to try to demonstrate the fruitfulness of such a conjecture. The past experience has shown time and again the uncertainties of science are not always amenable to reasonable predictions. We can hope and try but we cannot build a socio-economic future on it.

When we come to food, another equally essential element of survival of our society, we can argue in the same vein that there are substantially vast possibilities. However, one also must recognize that there are equally strong limitations. The possibilities include

our ability to recycle plant nutrients from wastes, such as nitrogen, phosphorus and potassium from waste, to develop nitrogen synthesis in the soil by rhizobia or by other nitrogen fixing micro-organisms. We can even speculate on the possibility of developing plants by genetic engineering which will be able to synthesize the nitrogen they need from atmospheric nitrogen. One can think in terms of selective genetic engineering experiments to develop plants which have much greater efficiency in the use of solar energy. There are potentialities of using the seas, that cover more than three quarters of the globe, for producing food and materials we need. All of these are exciting possibilities that science indicates, which might vastly expand our food and material resources. On the other hand, there are limitations equally strongly perceivable at least at two levels. At the first, level in the past, man has been ignorant of the intimate relationships between all organisms in the living world of which he is a part. Only recently has he been perceiving these relationships and his dependence on the entire living and non-living world for his survival. However, either through ignorance, inadvertance or greed he has disturbed ecological systems such as grasslands which have been converted into deserts. Lakes and rivers have dried. Vast fields of agricultural land have become dust bowls. We do not yet know whether there are limits beyond which the ecological system, in which we live, can be disturbed so much that they will fail to recover or find new equilibria. The small warnings that we have in the destruction of the smaller or simpler ecological systems such as lakes and rivers have shown that much effort and money has to go into bringing them into some semblance of a new equilibrium. Fortunately, such ecological disturbances have not yet happened on a global or a continental scale.

The rapid advancement of technology and the increase in population make much greater demand on the resources of nature, a nature which we share with all life. Such demands on nature can cause much bigger destruction than we have seen so far at any time in our history. Food, therefore, remains a critical element because of the demand it makes on nature. The critical factors grow sharper as the population increases. By the turn of the century there will be perhaps 1000 crores of people in the world and the stress on the ecological system will certainly double if not more. In India the population will perhaps exceed one billion or 100 crores and the stress on our environment will exceed twice of what it is today. Science thus contains both a promise and a threat for the future. The greatest danger, of course, is the unforeseeable that happens in science can also happen in nature. The successful solution of one problem creates another which can be sometimes much bigger and less tractable than the problem that has been solved. The solution of food problems of our country by massive methods of cultivation of hybrid varieties and extensive use of nitrogenous fertilisers and pesticides have seeds of inherent danger. There are other dangers in the reduction of forest

(Continued on page 686)

65th Science Congress

The 65th annual session of the Indian Science Congress Association
is being held at Ahmedabad from January 3 to 7, 1978

About the Sectional Presidents whose photographs
appear on the cover page.....

Dr. S. M. Sircar, General President, 65th Indian Science Congress, to be held at Ahmedabad, from January 3 to 7, 1978, was born in Paikpara-Nadia in March, 1908. He had Hons. degree in Botany from the Presidency College, Calcutta and M.Sc. in Botany in 1931 from the University College of Science, Calcutta. His interest in Botany was initiated by his father who had long services in the forest dept. Govt. of Bengal, Bihar and Orissa. From 1932 to 1934 he worked as a research student under Prof. P. Parija, Prof. Boshi Sen and Prof. S. R. Bose. During 1934 to 1936 he was a Ph.D. student in plant physiology in the Imperial College of Science & Technology, London under Prof. F. G. Gregory and had also training in mineral nutrition for six months at the Rothamsted experimental station, Harpenden, England.

After returning to India in 1937 he joined the University College of Science, Calcutta and was put in charge to start and organise the plant physiology laboratory for teaching and research. He undertook researches on the physiology of the rice plant and created a school of research workers who have been occupying important positions in universities and research institutes. His special fields of research are vernalization and photoperiodism, mineral nutrition, seed germination, auxin action and photosynthetic efficiency. The practical application of the investigation on the photoperiodic sensitivity of rice first reported by him has been the extension of cultivation of photosensitive *Aman*

rice with balanced levels of fertilisers having higher grain yield in winter season as Boro crop. He and his associates have discovered several plant hormones from waterhyacinth and mangrove plants. The hormones isolated from water hyacinth have great practical importance. Food and Agricultural Organisation of the United Nations invited him to deliver lectures at the International Training Centres for rice breeding.

During 1946-47, Dr. Sircar was on leave to serve the University of Dacca as Head of the Department of Biology and from 1949-51, was on deputation to the Govt. of India as a Professor of Agricultural Botany, Central College of Agriculture, New Delhi. In 1954 he was elected a Fellow of the Indian National Science Academy. During 1958-59 he travelled widely in Europe, U.S.A. and Japan with a travel grant from the Rockefeller Foundation and delivered lectures on the physiology of the rice plant. He served as Sir Rashbehari Ghosh Professor of Botany and Head of the Department, Calcutta University from 1960-67. As a member of the Govt. of India delegation of Botanists he visited for 3 months several botanical gardens and research institutions in U.S.S.R. He has written a book on plant hormone research in India and edited the International Symposium on Plant Growth Substances in 1967.

In 1967 he was invited for the position of Director, Bose Institute, Calcutta and served till 1976. The researches continued by Dr. Sircar at the institute dealt with photosynthetic efficiency and

productivity of rice, ageing of seeds and plant hormones. The interesting finding is that photosynthetic efficiency of rice is subservient to the translocation of photosynthate from leaf/stem to ripening grains. Adopting tracer technique it was demonstrated that the local tall varieties are not photosynthetically less efficient rather some of them have greater efficiency but deficiency in transport to the grains is the main contributing factor for poor grain yield. He was awarded the Rafi Ahmed Kidwai memorial prize and medal for the biennia 1968-69 by the ICAR and elected an honorary fellow of the German Academy of Natural Science in 1974. He also visited New Zealand, Australia and Philippines in 1973. He served as Treasurer (1968-71) and General Secretary, Indian Science Congress Association (1972-75) and represented the Science Congress at the Annual Meeting of the British Association for the Advancement of Science in England, 1969 and the Bicentennial Meeting of the American Association for the Advancement of Science in Boston, 1976 and was elected as one of the Vice-Presidents of the International Botanical Congress, Leningrad 1975.

After retirement from Bose Institute in 1976, Dr. Sircar is now engaged in researches as an emeritus scientist, ICAR at the Department of Botany, Calcutta University. He continues as member of the Executive Committee and Advisory Bodies of the Government and other organisations and is writing a book on the physiology of the rice plant.

Shri R. B. Chakravorty, President, Section of Engineering Sciences, 65th Indian Science Congress, was born in 1911. He graduated in Engineering at the University of Calcutta in 1933 and received the only First Class degree in Engineering (of the University) during the year. After the practical training he was awarded the Sibley Scholarship of the University for Post-graduate work and was attached to the Railway Workshops at Jamalpur.

In 1936 he joined the Irrigation Department of the Govt. of West Bengal, where he successively held different Engineering appointments before retiring as Chief Engineer in 1969. All through this period he was mostly engaged in major river valley projects. During this period he also

acted as a Visiting Lecturer in Engineering Institutions.

In the early sixties his services were taken by the Govt. of India on deputation for appointment as Chief Engineer, Farakka Barrage Project, during the planning and the starting phase of the constructions. Subsequently as a Member of the Technical Advisory Committee of the project he made valuable contribution to the project, particularly in respect of the Cofferdam Designs.

Apart from his regular works he was frequently consulted by different departments of the Governments of India and of West Bengal in connection with challenging problems.

In 1969 he was made a whole-time Director of the Board of

Directors of the Calcutta Metropolitan Water & Sanitation Authority. In 1974 he was appointed Adviser of the Corporation of Calcutta. Presently he is also the Chairman of the Teesta Project of the Govt. of W. Bengal.

In 1955 Shri Chakravorty was sent by the Govt. of India as a delegate to the International Congress on High Dam held at Paris under the auspices of the World Power Organisation. He has visited West European and North African countries as also Thailand.

In consideration of his contributions to the design and construction of Dams and Barrages, the Indian National Science Academy elected him a Fellow in 1968.

Dr. Hrishikesh Jana, President, Section of Physiology, 65th Indian Science Congress, was born in 1928 at Midnapore, West Bengal. He obtained B.Sc. (Hons) and L.M.F. in 1949; thereafter he had his M.Sc. in Physiology and M.B.B.S. of the Calcutta University.

Dr. Jana was Professor of Physiology in Vidyasagar College, Calcutta; he edited a textbook of Physiology in 1958. He served as Associate Professor in Kasturba Medical College, Manipal. He joined N.H.L. Municipal Medical College and K. M. School of Postgraduate Medicine and Research, Ahmedabad as the Professor and Head of the Department of Physiology in 1963. He served as members of Board of Studies and Medical Faculty of the Gujarat University. He has been on the Editorial Board of the Indian Journal of Physiology and Pharmacology since 1970.

His research interest has been principally in the field of neurophysiology, psychophysiology and medical hypnosis. His studies of physiological parameters

in hypnosis and successful clinical use of hypnosis have created interest in this newer tool of medicine in this country. He got his Ph.D. (Cal.) on his independent thesis, "Physiological Aspects of Hypnotic Trance". The American Institute of Hypnosis awarded him a citation for his outstanding contribution to medical literature in the field of hypnosis. He is the founder and president of the Indian Society for Clinical and Experimental Hypnosis (Estd. 1972), which is constituent to the International Society of Hypnosis. He has been elected as a Member of Board of Directors of the International Society of Hypnosis for 3 years (1977-79).

Professor Jana is a faculty member of the International Graduate School of Behavioural Sciences, U.S.A., since 1973. He delivered a lecture on "Hypnosis and its Medical Applications" at the Indian Council of Medical Research, New Delhi in November, 1975.

Prof. Jana acted as a chairman in the International Congress for Hypnosis and Psychosomatic

Medicine, Mainz, 1970 and was Guest Professor, Department of Psychotherapy, University of Mainz. He actively participated in the International Congress of Physiological Sciences, New Delhi and its Satellite Symposium at Madras in 1974. He participated as Guest Speaker in the Congress of the International College of Psychosomatic Medicine, Rome, 1975. He was invited speaker at the International Congress of Hypnosis at Philadelphia, 1976. He visited many research centres of hypnosis in Europe and U.S.A.

In recognition of his contribution in medical research he has been elected as a Member of the National Academy of Medical Sciences (India). Prof. Jana is also a member of various scientific societies such as Physiological Society of India, Indian Association for Advancement of Medical Education, American Association for the Advancement of Science, Gujarat Psychiatric Society, Indian Medical Association, etc. He has been associated with Indo-German Cultural Centre, Ahmedabad since 1969.

Dr. Shrikrishna Vasudeo Kale, President, Section of Psychology & Educational Sciences, 65th Indian Science Congress, was born in Pune, Maharashtra, on 10th April 1924. He obtained his B.A. and M.A. degrees in 1944 and 1947, securing first rank among the candidates in his subject in the University of Bombay and being winner of various awards, prizes, scholarships, medals etc. throughout his academic career upto M.A. Because of his brilliant scholastic achievements, he was privileged to be associated with his Alma Mater (S. P. College) in different teaching positions immediately after his first degree such as College Fellow, Tutor-Lecturer, and later on as Professor and Head, Department of Psychology at Sir Parashurambhau College from June 1944 and Life-member of Shikshana Prasarak Mandali which runs S.P. College, Poona till December 1959. In August 1949 he proceeded to U.S.A. for higher post-

graduate studies at Columbia University in the city of New York. He was also fortunate to secure sponsorship from organisations in U.S.A. like Watumull Foundation and the U.S. Graduate Naval and Army Research Programme. In U.S.A. he was a student of prominent psychologists like Woodworth, Garrett, Klineberg, Graham, Carpenter, Zubin, Warden and Keller. In 1953, he completed his Ph.D. degree with a dissertation in a novel area combining psychology, educational sciences and mass media. Some psychologists have recognized it as a 'pioneer-study' having significant theoretical and practical importance. Dr. Kale is perhaps among the first few to be awarded a Ph.D. degree in the subject of Psychology in Maharashtra State. On his return to India in 1953, he resumed his teaching duties in S. P. College, Pune, and worked there until December 1959. In 1959, he joined the

Department of Applied Psychology of the University of Bombay as a Reader. In 1968, he was promoted as Professor and Head of the Department, and he continues to be in that position to-date. He was Sectional President for the Psychology Section at All India Philosophy Congress in Ahmedabad, in December 1958. He has presided over the deliberations of various conferences, seminars and symposia of one section or the other like the conference of Indian Academy of Applied Psychology held at Mysore (1968) and Dharwar (1975), International Congress of Parapsychology at Waltair (1974) etc. He is the President of the Bombay Psychological Association and the Secretary of the Indian Psychological Association, Vice-President of the Indian Association of Programmed Learning. His main interests are in the fields of experimental psychology and social and Industrial Psychology.

Dr. Dinabandhu Banerjee, President, Section of Medical and Veterinary Sciences, 65th Indian Science Congress, was born in 1922. He hails from a family of Howrah (West Bengal), rich in culture and heritage. Having passed the M.B.B.S. examination of the Calcutta University in 1946 (standing first in Pathology and Midwifery) and the D.G.O. examination in 1952, he proceeded to the U.K. for higher education in Gynaecology and Obstetrics at Dublin and London. He was admitted as a Fellow of the International College of Surgeons in 1958 and a Fellow of the American College of Surgeons in 1964.

Dr. Banerjee was attached to the R.G. Kar Medical College in various capacities for about sixteen years and was teacher and examiner in Obstetrics & Gynaecology. He was associated for long with the T.L.J. Hospital, Howrah as Surgeon-in-charge and with the Konnagore Matri Sadan and Sishu Mangal Prasthan, Hooghly, as Consulting Surgeon.

Dr. Banerjee has been playing a significant role in the activities/

services of the Indian Medical Association at the district, the State and the national levels. He is a past President of the IMA, Bengal State Branch; has been the Editor of "Your Health", an IMA organ on health education for the last three years; is a member of the Central Council and Working Committee of IMA (Central) and is the Chairman of the IMA Committee on Sports Medicine.

Holding important offices in a number of district and State level sports organisations in the field of Table Tennis, Gymnastics, Yoga Bhayam, Archery, Women's Sports, Cricket, etc. Dr. Banerjee has done a lot to improve teaching and practice of sports medicine. He has been a prime mover in building up a Students' Health Centre and a Players' Health Centre at Howrah.

Dr. Banerjee has been intimately associated with the Calcutta University since 1966 as a very active member of the Senate, the Syndicate, the Academic Council and the Faculty of Medicine. He has helped the Calcutta University

National Service Scheme (N.S.S.) unit to undertake and execute several useful social service projects.

Dr. Banerjee led the I.M.A. delegation to the 85th Anniversary Celebration of the Ceylon Medical Association at Colombo in 1972. He also participated as a member in I.M.A. delegation to the Sixth All Nepal Medical Conference in 1973, the 29th General Assembly of the World Medical Association held in Tokyo in 1975, and to Canada and U.S.A. in 1976. He was elected a direct member of W.O.N.C.A. and participated in the Seventh World Conference on General Practice held at Toronto in October 1976 and the W.O.N.C.A. 7th World Conference on Family Medicine held at the same place.

Dr. Banerjee has been a sincere social worker and a successful organiser of public health programmes. As the architect of the "Ideal Village in Public Health" programme Dr. Banerjee has been able to cover 21 villages in 8 districts of West Bengal upto now through public health projects

run jointly by I.M.A. and other government or private bodies.

In his own district Howrah he has started the first hospital for children—Dinanath Sishu Sadan, has launched a family welfare campaign among slum-dwellers, has sponsored a scheme for a 15-bed Tuberculosis Hospital and has been running a leprosy centre—Basu Memorial Leprosy Clinic for several years. He has sponsored a scheme for a Nurse's Training Centre and another scheme for training of women in para-medical course for the district of Howrah. He has also contributed in various ways to the growth of the Howrah Medical Club, an indispensable orga-

nisation for all qualified doctors of Howrah.

Amidst all these diverse activities, Dr. Banerjee continues his interest in research. He has published 55 scientific papers in various Indian and Foreign Journals. Very recently he was appointed by the Calcutta University as a lecturer for the Post-Doctoral course in Environmental Science. He has presented papers in various conferences at home and abroad on Medicine, Drugs, Social Service, Health Care and such other topics.

Dr. Banerjee is an active member of *Indian Science Congress Association* since 1962 and presently a Life Member. He has

held responsible offices, participated in symposia and presented a number of papers in the section of Medical and Veterinary Sciences. He is represented on the Society of Experimental Sciences in India, Indian Red Cross Society, St. John Association etc. and Indian Association for Productivity, Quality and Reliability. He has organised quite successfully a large number of scientific and professional meetings.

He has been appointed a member on the Specialist Advisory Panel/Examination Panel for the subject of General Practice—by National Board of Examination, New Delhi.

Prof. H.C. Govindu, President, Section of Agricultural Sciences, 65th Indian Science Congress, has had a distinguished academic and scientific career as a botanist and plant pathologist for the past three decades. He obtained his Master's degree from the University of Mysore in 1948, before joining as a faculty member of the Botany Department of the Agricultural College, Hebbal, Bangalore. In 1954, he went to the U.S.A. to pursue his Ph. D. programme at the Washington State University, Pullman, Washington, U.S.A. under one of the most distinguished teachers and scientists of eminence in smut fungi, Dr. George W. Fischer and obtained his Ph. D. degree in 1957. Later, he worked as a Post-doctoral Research Associate on Plant viruses for about a year before returning to India in 1958. Since his return from States, he has worked in Karnataka State as Professor of Plant Pathology and State Plant Pathologist. He was appointed Professor and Head of the Department of Plant Pathology at the University of Agricultural Sciences in 1965 at its inception. Since 1972, he is working as Senior Professor UNDP/ICAR, and Head of the Department of Plant Pathology. Presently he is

also Acting Director of Instruction, Agricultural College, Hebbal, Bangalore.

His contributions relate to the fields of systematic Botany and Embryology. In the field of Systematic Botany, his outstanding publications among other things include the monographic studies on grasses and sedges of Karnataka besides numerous papers in the area of ecology and weed science.

Later, Dr. Govindu started his researches on fungi which include monographic studies of *Cercospora*, a cosmopolitan genus attacking a variety of economic crops and other hosts. Nearly 80 new species were described and in addition, some 80 new hosts are recorded as new distribution to India. Similar monographic studies were made on *Ephelis* and *Balansia*. Apart from these monographic studies, work on several fungi have been published in a number of scientific journals.

In the field of Plant Pathology, his major contributions are focused on field crop diseases, such as rice, finger millet (ragi), maize, wheat and sorghum. In addition to contributions on etiology and Epidemiology of ragi mosaic virus, he studied for the first time

combined resistance of the world collections of ragi for three major diseases, blast Helminthosporiose and *Sclerotium* wilt. One of the most thought provoking piece of work in the control of plant viruses is the possibility of chemotherapeutic control of tomato leaf curl virus by anti-viral substance.

In recognition of his outstanding contributions in the area of Botanical sciences, he has been cited and included in the repository of portraits of Botanists of the world in Hunt Botanical Library, Pennsylvania, U.S.A. His outstanding contributions in Mycology and Plant Pathology has earned him a unique distinction of inclusion in the gallery of noted contemporary mycologists of the world in Mycopathology, Holland. He had presented scientific papers and participated in a number of International Conferences both in India and abroad. He has published well over 150 research papers and is a member of a number of scientific societies. He is presently a fellow of the Indian Botanic Society and a fellow of the Indian Academy of Horticultural Sciences. He was elected Vice-President of the Indian Phytopathological Society (1972-73).

Dr. K.M. Saksena, President, Section of Mathematics, 65th Indian Science Congress, was born on September 15, 1919 at Kanpur, U.P. After graduating in Science from D.A.V. College, Kanpur in first class in 1939, he went to St. John's College, Agra and passed the Master's examination in first class in 1941 standing first in order of merit both at the M.A. & M.Sc. examination in Mathematics of Agra University of that year for which he was awarded a gold medal by the University. He was awarded Ph.D. by the same University in 1952 for his thesis on the Theory of Laplace-Stieltjes Integral.

Dr. Saksena served as a lecturer in Mathematics at S.D. College, Muzaffarnagar, Agra College, Agra and University of Saugar, Saugar from 1945 to 1955 and as a Professor in Th. Dev Singh Bisht Government College, Nainital from 1955 to 1959. In 1959 he was deputed to work as a University Professor of Mathematics at Tribhuvan University, Kath-

mandu, Nepal and he worked there till 1963. From there he returned to his post at Nainital and was appointed University Professor & Head of Mathematics Department at Ranchi University, in July, 1964. He was promoted to a Senior Professorship in Mathematics by the Ranchi University in 1970 and is holding that post since then. He was Dean, Faculty of Science of Ranchi University in 1968-70 and again in 1974-76.

Dr. Saksena has been an active worker in the field of Integral Transforms, Special Functions and Summability of Integrals. He spent a year in U.S.A. in 1955-56 as a post-doctoral exchange research fellow and worked under Prof. A. Erdelyi at the California Institute of Technology, Pasadena. He has published papers both in Indian and foreign journals. He is now working and guiding research in Integral transforms of Distributions and Generalized functions and about a score of workers have obtained Doctorate

degree under his supervision.

He is a member of almost all the Mathematical Societies of the country and also of the London Mathematical Society, the American Mathematical Society and the Mathematical Association of America. He was elected a Fellow of the National Academy of Sciences (India) in 1970 and was President of the Bihar Mathematical Society in 1970, Vice-President of Bharat Ganita Parishad and a member of the Council of the National Academy of Sciences (India) in 1974 and 1975. He has organised several Summer Institutes in Mathematics and has delivered lectures at seminars in different universities. He is a reviewer for Mathematical Reviews and the Zentralblatt für Mathematik, is on the Editorial Board of a number of mathematical journals and is also the Editor of Ranchi University Mathematical Journal published by the Department of Mathematics of Ranchi University. He is also a joint author of a book on Special Functions.

Professor Divya Darshan Pant, President, Section of Botany, 65th Indian Science Congress, was born on 18th October, 1919 at Ranikhet in the Kumaon Hills. Educated at Ranikhet, Nainital and Lucknow, he has had a brilliant academic record. He stood first in first division in M.Sc. and was awarded merit research fellowship and scholarship at Lucknow University during 1941-44. In his early research career he had been a student of the late Professor Birbal Sahni, F.R.S. He joined the Allahabad University in 1945 as Lecturer and became Reader in 1964. In 1966 he was appointed Professor of Botany and Head of the Department. He is presently a Senior Professor and has also served as the Dean, Faculty of Science during 1974-77.

He has published about 125 original papers based on original research in recognized scientific journals and a monograph entitled "Cycas and the Cycadales". His work has led to the establishment of more than a hundred new taxa of fossil and living plants. A

number of new theoretical concepts in anatomy, taxonomy, ontogeny, fossil botany, palynology, etc, have emerged out of his work, which are extensively quoted in text-books, reviews, monographs and treatises published in India and abroad.

Professor Pant was the recipient of one of the twelve international awards of Silver Medallions given on the occasion of the Silver Jubilee of the Birbal Sahni Institute of Palaeobotany for his outstanding contributions on Palaeobotany. He was awarded the Birbal Sahni Gold Medal for 1976 at the Bhubaneswar Science Congress in 1977.

Professor Pant is connected with several learned societies and academic bodies of different Universities. He is a fellow of the Indian National Science Academy, Indian Academy of Sciences, National Academy of Sciences of India, Indian Botanical Society, Palaeobotanical Society, Linnean Society (London). He is a member of the Executive Committee of the International Organisation of

Palaeobotany (IOP). He was the President of the Indian Botanical Society (1976). He is the Secretary of the Society of Plant Taxonomy and Convener of the Indian National Science Academy, Local Chapter, Allahabad. He was a member of the Govt. of India's Joint Review Committee for the Zoological and Botanical Surveys of India. Presently he is a member of the Indian National Commission for Cooperation with Unesco; Governing Council of the Birbal Sahni Institute of Palaeobotany, Lucknow; Ad-hoc Executive Council of Allahabad University, and various other academic bodies.

In 1954, Professor Pant visited UK and other European countries as an awardee of a British Council grant and was associated in research with Professor John Walton at the University of Glasgow and with Professor T.M. Harris, F.R.S., at the Reading University. He also worked at the British Museum (Nat. Hist.), the Senckenberg Institute, Frankfurt, and the Natural History

Museum, Paris. In 1975 he was specially invited as a guest of the USSR Academy of Sciences at the XII International Botanical Congress, Leningrad, and to act as a Speaker of a symposium. He was also invited to preside over one of the symposia at the VIII International Congress on Carboniferous Stratigraphy and Geology.

He delivered the Panchanan Maheshwari Memorial Lecture (1971), the Birbal Sahni Memorial Lecture (1973), Professor S.P. Agharkar Memorial Lecture (1976), and a series of invited Lecturers at many Indian Universities. He was invited as an expert

at the Ist International Conference on Palynology at Tucson, Arizona, and to become Vice-Chairman at the IInd and IIIRD International Palynological Conferences at Utrecht (1966) and Novosibirsk, USSR (1971). He represented the Allahabad University at the Summer Schools in Botany at Darjeeling and Kodaikanal. He was also invited to the Gondwana Symposium held in Argentina, Buenos Aires, Australia and India. He has presided over the Palaeozoic Section of the Annual Meeting of the Palaeobotanical Society at Lucknow in 1964 and the Palaeozoic Palynology Section in 1966. He was the Chairman of a sym-

posium at the Silver Jubilee International Palaeobotanical Conference at Lucknow (1971). He has chaired sessions of various symposia and seminars held at Delhi University (1969), Poona University Autumn School (1966), Sardar Patel University (1975), Nagpur University (1976) and Punjabi University (1977).

Professor Pant is internationally known chiefly for his contributions on *Glossopteris* flora, palynology, gymnosperms, stomatal development and anatomy. He has built a school of research in Palaeobotany, Morphology and Anatomy and Palynology at the Allahabad University.

Shri A.B. Das Gupta, President, Section of Geology and Geophysics, 65th Indian Science Congress, was born on October 15, 1917. He obtained a first class Master's Degree in Geology from Presidency College in 1940. Since then he has risen through various phases of professional life, including intensive field work, supervision of specialised earth science programmes and participation in the highest level of management. The entire gamut of his professional and managerial experience has bestowed on him an unique status and stature, making him one of the respected elders in the field of the Earth Sciences in India.

His professional field and supervisory experiences were mostly confined to the complicated sphere of petroleum exploration and development. Starting his career with the Burma Group Oil Companies, more than a decade of his active field work has specially helped in elucidating the geological control of petroleum occurrence in the classical Assam-Arakan region. He also has the reputation of introducing photo-geological interpretation into the mosaic of field geology in the country. This phase was followed by the study and interpretation of more specific problems connected with the development of Petroleum resources that provided

valuable geological inputs in the field of Petroleum development and reservoir engineering. Being associated with an organisation having exploration and production intimately linked up, he gathered unique experience in all aspects of the petroleum industry.

As a logical consequence of his attainments, intellect and experience he was inducted in 1955 into the planning and directional aspects of various phases and facets of the Oil industry, leading to his elevation to the Board of Oil India in 1968. He also had the proud privilege of being the first Indian to guide this company as its Managing Director, a position of trust that he has most competently held till his retirement in October, 1976. Oil India Ltd., is one of the major Joint Sector Companies in India dealing with the entire spectrum of petroleum development. As its Chief Executive, Shri Das Gupta gave new dimensions to its activities, manifested in the discovery of new oil fields, greater technological competence, high management level and profitability.

Apart from his key role in Oil India Ltd., Shri Das Gupta has served as a member (part time) of ONGC, besides policy participation activities on the governing councils of the Birbal Sahni Institute of Palaeobotany and the All

India Management Association. Being keenly interested in the advancement of Earth Science and its allied disciplines, he has been actively associated as Fellow or office bearer with the Geological Mining and Metallurgical Society of India, Geological Society of London, American Institute of Mining, Metallurgical and Petroleum Engineers (President of its India Section), and the Mining Geological and Metallurgical Institute of India.

His professional experience and eminence has naturally transgressed the national level. He was a Sectional President in the Fifth World Petroleum Congress (New York, 1959) and Twentysecond International Geological Congress (New Delhi, 1964). He represented the country as a delegate to the ECAFE's Fourth Symposium on the Development of Petroleum Resources of Asia and Far East (Canberra, 1969) and the World Petroleum Congress (Mexico, 1967, Moscow, 1971). He was also called upon to lead the Indian delegation to the first African Petroleum Conference (Tripoli; 1974).

Shri Das Gupta has contributed substantially to the advancement of science, technology and technical management through valuable publications of both the national and international levels.

These include special lectures that he was requested to deliver, including Sir M. Visveswariya lecture to the Institution of Engineers (Dhanbad), AMN Ghosh Memorial lecture to the Oil National Gas Commission (Dehra Dun), Sir Thomas Holland Memorial lecture to the Mining, Geo-

logical and Metallurgical Institute of India (Calcutta).

His outstanding professional and managerial experience have been recently drawn upon by the Government of India by nominating him as member of a High Power Committee to consider the

setting up of an exploration and development wing in the proposed Institute of Petroleum Technology at the Aligarh Muslim University, and as Vice-Chairman of the High Power Committee constituted to study the structure and performance of the G.S.I.

Dr. Sachchidananda, President, Section of Anthropology & Archaeology, 65th Indian Science Congress, was born on October 28, 1926 at Chapra in Bihar. He was educated at the Patna Collegiate School and Patna College from where he passed out in 1947, standing first in the first class at the M.A. examination in History. While in college he was awarded several gold medals and was the recipient of merit scholarships.

He was appointed Lecturer in History in the Patna University. In 1950 he was awarded State Scholarship for the study of Anthropology at the University of London. He was awarded M.A. degree in Anthropology from the School of Oriental and African Studies in 1952. In London he worked under Prof. Christoph von Furer-Haimendorf. On return home he organized and started the Postgraduate Department of

Anthropology under the auspices of Bihar University at Ranchi.

In 1957 he was appointed Director of the Social Education Organiser's Training Centre under the Ministry of Community Development and Co-operation at Ranchi. The Centre gave specialized training in Anthropology to Social Education Organisers working in community development blocks in tribal areas all over the country. During this period he had an opportunity of studying tribal welfare work throughout the country. In 1961 he was awarded D. Litt. degree by the Patna University.

In 1962 he was appointed Director of the Bihar Tribal Research Institute at Ranchi. This is a large Institute doing research in all aspects of tribal life and culture. Early in 1966 he moved to Patna as Professor of Sociology at the A. N. Sinha Institute of Social

Studies. In 1971 he became the Director of the Institute.

Dr. Sachchidananda has published a large number of papers in research journals both in India and abroad. He has also conducted several researches under the auspices of the Research Programmes Committee of Planning Commission and of the Indian Council of Social Science Research. At present he is engaged in a rounded study of Munda Life and Culture.

He is a life member of the Indian Anthropological Association, and Folklore and Ethnographic Society, Vice-President of the Council of Social Research and President, Bihar Sociological Society. He is intimately connected with the Indian Council of Social Science Research and the National Council of Educational Research and Training.

Dr. B. K. Behura, President, Section of Zoology, Entomology & Fisheries, 65th Indian Science Congress, was born in Bilipada, in the district of Cuttack, Orissa on February 20, 1922. He graduated from the Bangabasi College, Calcutta. He obtained his M.Sc. degree in Zoology in 1946 from the University College of Science, Calcutta. In 1947 he proceeded to the United Kingdom as a State Scholar and was awarded the Ph.D. degree of the University of Edinburgh in 1949.

Prior to joining the Utkal University in 1961 as Professor of Zoology, he held the post of Lecturer in Zoology from 1947 to 1957 and Reader in Zoology from 1957 to 1961, in the Orissa Government Educational Service.

Dr. Behura has to his credit

about 100 research papers published in foreign and Indian journals, and a memoir on the Crop-pests of Orissa. Besides entomology, his field of work extends to acarology, Ophidiology, Ornithology and Wild Life.

He is wellknown as a writer of distinction and has made significant contributions to the study and research in the field of Zoology in Orissa. He won a National award in 1965 for his book in Oriya *Odisara beng* (Frogs and toads of Orissa), a state award in 1967 for his book *Odisara sapa* (Snakes of Orissa), and another National award in 1971 for his book *Dinosaur* (Dinosaurs). He has also translated into Oriya P. J. Deoras's book on *Snakes of India* and Salim Ali and Laeeq Futehally's

book on *Common Birds* (National Book Trust, India). Dr. Behura's book on 'Wild animals of India' is under print by the Orissa State Bureau of Textbook Preparation and Production.

Dr. Behura is associated with a number of scientific institutions. He acted as the General Secretary of the Second All-India Congress of Zoology, Varanasi, 1962, and the General Secretary & Treasurer of the Third All-India Congress of Zoology, Waltair, 1975. Currently, he is the Treasurer, Zoological Society of India; Secretary & Treasurer, Orissa Association for Advancement of Science; President, Zoological Society of Orissa, and Editor, *Prakruti—Utkal University Journal Science* (since 1962).

Prof. S. P. Mushran, President, Section of Chemistry, 65th Indian Science Congress was born at Allahabad on November 1, 1921. He received his early education at St. Cecilius Convent, Allahabad and Government College, Allahabad, Bareilly and Moradabad. He joined the Allahabad University for higher studies in 1937, which was then one of the premier centres of Chemical Education and Research in the country, with which stalwarts like Prof. N. R. Dhar, Prof. B. K. Singh and Prof. S. Dutt were associated. He completed his advanced studies which culminated in the award of the D. Phil degree in 1945, and he joined the Faculty of the University next year. He was appointed Reader in Chemistry in 1967.

He is an effective and popular teacher of Physical and Analytical Chemistry of more than 30 years standing and as many as twenty five students have obtained their D.Phil and D.Sc. degrees working under his supervision. His main research interests have been in

Colloid Chemistry, Coordination Chemistry and Mechanistic Studies of Electron Transfer reactions. He is the author of over 130 original research papers and reviews which have found place in several international journals of repute.

During 1967-68 Professor Mushran participated in Unalco II, a Unesco sponsored Advance Course in Modern Methods of Chemical Research organized by the Czechoslovak Academy of Sciences and Charles University, Prague, Czechoslovakia and there he received specialized training in polarography and Electroanalytical techniques under the leadership of Prof. J. Zyka. Later he moved to the Institute of Instrumental Analysis, Brno, Czechoslovakia and under the inspiring guidance of Prof. J. Janak was initiated into the technique of vapour-phase chromatography and subsequently successfully collaborated with Prof. L. Sommer on a research project at the Purkyne University, Brno, Czechoslovakia. He participated

in a seminar on the teaching of chemistry in schools and universities in Czechoslovakia organised by the Charles University, Prague and Unesco, Paris. While in Europe he travelled extensively and visited important centers of chemical research in Austria, Switzerland, Germany, France and England. He was invited to participate in the International Conference on Rheology, Rhode Island, USA in 1963.

Professor Mushran is a fellow and life member of several scientific bodies in India and abroad and has been associated with the National Academy of Sciences, India, responsible for the editing and publication of the physical sciences section of its proceedings. He was Recorder of Chemistry Section, Indian Science Congress sessions at Chandigarh and Nagpur and has delivered invited lectures at several universities and at numerous occasions presided and presented papers at national conferences and chemical conventions.

Professor B. Ramachandra Rao, President, Section of Physics, 65th Indian Science Congress, was born in 1922 in Yellamanchilli in a poor family from backward community in the Visakhapatnam District. His sparkling intelligence and hard work brought him the Sripathi Medal for securing the first rank in B.Sc. (Hons.) in Physics of Andhra University in 1944, and the Metcalfe Medal for submitting the best thesis for M.Sc. in Physics of Andhra University in 1945. Under the able guidance of Dr. S. Bhagavantham, he did his doctoral research work, and got his D.Sc. in 1949 for his thesis entitled 'Diffraction of Light by Ultrasonic Waves'. His brief but active tenure as C.S.I.R. Scientific Assistant in the Geology Department during 1949-50 indicates his wider interest in scientific investigations. In 1950, he became Lecturer and went abroad in 1951-52 as first Senior Research Fellow under Colombo Plan to work with the world renowned scientist Dr. D. F.

Martyn in Australia. He developed great interest in Radio Physics and on his return back to the Andhra University he started his first experiments in Ionospheric Physics. From then onwards, this field of research developed fast under his guidance and is now considered as one of the best research schools in the country in this subject.

He made several important contributions in ionospheric physics, ultrasonics and electronics. After becoming Reader in Physics in 1953, he visited the USA under the Wheat Loan Exchange Programme for five months, and published some of the new research findings in collaboration with Professor Gibbons of the Pennsylvania State University. He became Professor of Physics in 1958 and Professor and Head of the Department of Physics in 1963 and continued till June 2, 1976 when he joined the University Grants Commission as its Vice-Chairman.

Professor Ramachandra Rao has developed the Physics Department by starting new courses, research programmes, and also programmes involving training of teachers in affiliated colleges. He directed research programmes of a large number of scholars in the Physics Department of the Andhra University and produced 36 doctorates. He has more than 300 research publications to his credit. Scores of young men and women whom he has trained are now occupying high positions in various scientific institutions in this country and abroad. He keeps active interest in various scientific societies. He is a Fellow of the Indian National Science Academy, Indian Academy of Sciences, and a founder fellow of the Andhra Pradesh Academy of Sciences. He is currently the treasurer of the Indian National Science Academy.

He has attended several International Conferences and visited United Kingdom, USA, West

Germany, Australia, Spain, Brazil and Russia. He has also edited two important scientific volumes published by Academic Press and Bangalore Press. Currently he is a member of the Governing Body of C.S.I.R. He was a member of several committees of Council of Scientific and Industrial Research and University Grants Commission, and Indian National Science Academy. He is on the editorial board of several scientific journals. He

was the Chairman of the Indian team of Physicists at the Bi-national (India-USA) Conference on Physics Education which was held in June 1970 at Srinagar. He was responsible for starting Acoustical Society of India.

During the year 1967-68 Professor Ramachandra Rao was awarded the Sir Shanti Swarup Bhatnagar Award for the year 1965 for his contributions in Physical Sciences. Recognising the invaluable contribution made by him

in the field of education and research, Andhra University conferred on him the degree of D.Sc. (Honoris Causa) at the convocation held on 26th December, 1969. He was honoured as a distinguished scientist of Andhra Pradesh by State Government at the World Telugu Conference on 12th April, 1975. He is Founder Fellow of the Andhra Pradesh Academy of Sciences and also its President from 1975-76.

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Science & Technology in the Future of India

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lands, denudation of hill slopes and wholesale destruction of plant and animal species, amelioration of these hazards call for massive science not only in agriculture, but in many other areas some of which may not even be very closely related to this particular issue. The formulation of appropriate problems will be a very important task in the immediate future.

The formulation of appropriate problems in the areas of food, energy, shelter, clothing, health, education and movement of one billion people is a very critical task for the scientific and technological community in the immediate future and will make very high demands on our scientific ingenuity and foresight. On the one hand, these are practical problems not unrelated to our survival as a society; and on the other it has important international or global connotations. However, the solution to these problems will be scientific and technological as well as socio and economic. The egalitarian perceptions of our people, the need to harness resources and manage resources optimally so as not to jeopardise the well-being of future generations, the use of knowledge to develop new technology leading to new problems will need a vast amount of scientific activity. Such scientific activity will be centered around the identification of problems in more precise terms arising out of these perceived future difficulties. They will surely be the major challenges for Indian scientists during the rest of this century. To accept these challenges of the future Indian scientists need perhaps to think not so much in terms of current problems that excite scientists in developed countries, but more in terms of careful identification of problems much closer to home and the development of methodologies and approaches needed for their solution.

Economists, technologists, politicians and scientists in the developed world have been discussing the new international economic order that the developing world has been demanding. The scientists, technologists, economists and even politicians of the developing world have pointed out the importance of scientific research and technological development implied by a new international economic order. For

example, the utilisation of primary commodities and non-renewable resources from the developing countries are often carried out by the developed countries without the involvement of the developing countries' technologists in the processing of primary raw materials and commodities and participation in downstream activities.

The deficiencies in the information system and lack of technical information in the developing countries have been one of their weaknesses. This has led to proposals such as a world agency for mineral resources to compile and circulate information on reserves and trends in their exploitation and information on commercial transactions. Another proposal advocated a world energy research authority which will stimulate research on geothermal, solar, tidal, biogas and nuclear energy including fusion. There has also been discussion of proposals about an international code for transfer of technology in different forms and the revisions of the Paris Convention. Some of these issues are going to be discussed at the United Nations Conference of Science and Technology to be held in the end of 1978 or 1979. While the international political platform thus seems to have been energised, these ideas will have to be sharpened and made far more precise at the national level for any programme of the solution of scientific problems which relate to our society in the broad international context.

The scientists and technologists of our country, as in any other country, live in two worlds—their own society and country and the international community of scientists and technologists. The relationship between the scientists and the community has been generally very feeble in our country. In the new dimensions of science and technology and its application to the benefit of our society, this coupling between our society and our scientists need to be much closer. This will help our scientists, not only to perceive the relevance of problems, but to identify them with clarity and precision and take steps towards their solution and to the generation of new problems. It is in the methodology of finding solutions to these problems that our scientists will find the association of the international community of scientists valuable. □

Physics in Our Universities

J. P. Chaturvedi*

Physics is one of the basic natural sciences as it inculcates the discipline of logical thinking and the physicists do have a modicum of practical training. The experimental training is expected to teach the art of measurement, provoke thinking and allures a student to further enquiry and curiosity. The students of physics in most of the Indian universities are asked to perform numerous unimaginative and some trivial cook-book experiments, and to fill-in the blank laboratory notebooks. The student performs the experiments mechanically as a matter of routine. Teachers neither encourage nor expect manual dexterity and mechanical skill of the students. The operation of physics departments at subminimal strengths, with poor facilities and inadequate budgets, has created a number of problems such as the deplorable quality of graduates they turn out. Under pressure of economy-drive and population-explosion we are socializing ineffective education.

Physics represents an enormously large and still growing body of knowledge about nature. So our curricula purport to touch all or most of the current topics with a mesh of concepts, relationships and laws blurred into each other. In most of the Indian universities the revision of courses means deleting certain items and adding others. In the absence of a well defined comprehensive course, the pleasure from reading, learning and thinking about physics is not attained. In addition physics is fed to our students in such a manner that a mediocre student loses interest and resorts to memorizing examination-oriented topics, of-course, at the cost of understanding.

Examination reform is a bogey raised by those who have lost touch with the younger generation of teachers and the students. Both are keenly desirous as well as capable of handling the existing system with minor modifications. In place of examination reform more stress should be laid on providing adequate facilities for learning and procuring jobs. Future physicists can be quite useful in many areas of agricultural and biological sciences as they have been in engineering and industrial sciences in the past. The interdisciplinary approach has not yet gained momentum. In our country we have more than six hundred institutions, i.e. colleges and university departments offering graduate courses in physics. If we include the postgraduate teaching institutions and the centres for higher learning, then the number of physicists engaged either in research or teaching is about ten thousand at present. The approximate annual expenditure on physics is slightly more than thirty million rupees. In all fairness, it may be pointed out that the net effect has been rather minimal. We have contributed very little to help move the frontiers of physics. Our achievements can be counted on fingertips. We can be proud of a few

Indian physicists whose contributions are everlasting. But we have not grown with their ideas and have even lost the impressions of these great Indian physicists.

At present there exist not many creative centres for learning physics but rather ghosts of academically poor centres in our country. The situation in research institutions can be said by no standards to be satisfactory. In most of the institutions the research is being carried out like a gorilla warfare and that too with a research output which is not of international standard. We have helped establish science based factories to produce graduates, postgraduates and doctorates. An army of physicists, devoid of the accurate knowledge of physics, is in the making.

These comments may appear harsh but unfortunately they are true. The main reason is in the futility of aims and lack in efforts. The way to generate and transmit new knowledge and to train first-rate physicists can be achieved provided we develop the plans of our own, suited to existing conditions, involving reasonably low costs using indigenous equipments and talent and capable of execution in our structure of examination. The recommendations of Srinagar Conference on Physics Education and Research, may serve as guidelines to start with in this direction.

As university teachers we must improve the distorted image of a physicist as a brilliant bore. Films, models and other audio-visual devices should be presented to develop interest in the students. We must introduce flexibility and experimentation to adopt inter-disciplinary courses. Laboratory programmes must contain some projects or open ended experiments to develop capacity and ingenuity to solve new problems. It will foster heuristic spirit in the learners. Science education must inculcate habit of making inquiries. It will stimulate thinking and reasoning. After all aim of higher education is to cultivate thinking in the students. Due credit must be given to the daily performance of the students by internal assessment. Teachers role in determining the course content as well as the evaluation procedures must be accentuated. There should be faculty development programmes to encourage the professional competence of the teachers.

A substantial fraction of the staff should be drawn from amongst those trained at other universities or institutions, to avoid excessive in-breeding. "Physics Teaching Centres" devoted to the development of new educational material and programmes should be established around individuals or groups of individuals who have already shown some promise. An effort must be made to maintain a proper balance between theorists and experimentalists. Such centres will design and develop equipment, kits, textbooks and other educational material to popularize physics. These groups must be supported adequately in terms of laboratory equipment, workshop facilities and technical assistance.

It may be remarked that the other science subjects are either facing or may face similar problems. However, the pre-university curriculum should require a separate attention. (Courtesy : The Book Talk)

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Towards a Totally Indigenous Computer

Computer specialists are of the view that the exit of IBM should not create any problem except in the initial period. The maintenance aspect apart, ECIL of Hyderabad is confident that it can meet the demand for new computers for all types of applications.

The closure of its Indian operations by International Business Machines (IBM) marks the beginning of a new era in computer use in India. This era will be characterised by increasing self-reliance in the development and production of computers to suit Indian conditions.

How did IBM serve the Indian customers in the last ten or 15 years? What will be the consequences of its quitting? These questions are debated by computer specialists and the firms using computers brought or leased from this multinational.

There is no question that the first uses in India were promoted by the giant U.S. corporation. It was the use of foreign computers that increased Indian calculating speeds a hundred times and even more.

There is also no question that the IBM's computers are the last word in versatility and sophistication. There is obviously no end to the variety of applications to which these could be put. They can be worked in areas where the calculations would require to be performed within nanoseconds—billion of a second.

As a result of the pioneering promotional work of the foreign firms, businessmen have come to accept the concept of computers for stock inventory, accounts, data storing, etc. While in Western countries computerisation has become a basic concept like electricity with computer time regarded as public utility, such a development in India may be far off. Even so, computer proliferation in the country is too obvious to escape the notice of the spokesmen for an apathetic public who have brought into the open many of the social difficulties and policy problem arising from computerisation.

The computer population increased from 100 in 1970 to nearly 400 now. The foreign multi-national's share is more than half. However the majority of these are data processing and calculating machines and systems for applications developed to meet the needs of Western countries where labour is scarce and capital is plentiful.

Most of the foreign computers in operation now in India are used ones, obsolete and out-of-date, dis-

carded by West European countries, of course reconditioned by IBM in its facility at Pune. The advantage of going in for them were immediate delivery, debugged and proven software and hardware and in some cases interfaced operational peripherals.

One would expect that IBM with a world sales in 1976 of Rs. 14,000 crores, its Indian branch accounting for just 0.02 per cent had been operating on a marginal income in India. Nothing of the kind: computer experts point out that whatever the percentage figures, the multinational did make considerable profit from its Indian operations, particularly from servicing and maintenance. Latterly, of course with the time sharing concept spreading, reducing the off-peak duration of the systems, fewer computers come for maintenance scheduled with consequences for income from this source. These sources also assert that the multinational had charged for the 1401 systems (almost corresponding to mini machines) as for large computers.

An interesting revelation is contained in the PAC report for 1975-76 of the "unfair practices" indulged in by the foreign corporations such as transfer pricing under the garb of inter company billing system, exaggerated depreciation and development rebate claims, etc. One thing is certain and it is that the promotional work done by IBM and other foreign firms was oriented to their global marketing strategy and did not take into account the conditions obtaining in India for specially developing systems to suit them.

Nucleus for Expertise

Computer specialists are of the view that the exit of IBM need not create any problem and its machines need suffer no setback in their operations. Several firms now using leased out machines are reported to have decided to buy them outright. They point out that the newly created Computer Maintenance Corporation in the public sector could well look after the foreign machines without the help of the IBM men. In the initial period, however, some difficulty might be experienced but as the new Corporation becomes fully operational there should be no problem. It may be necessary to depend on persons with experience—a number of them have been with the IBM—and they can form the nucleus for accumulating expertise.

Where does the country go from here? India has its own computer industry which is about half a dozen years old. The Electronics Corporation of India, Hyderabad, claims to have clearly mastered the computer's basic technology. To-day, there are about 100 ECIL made machines in use in the universities, research centres, educational institutions, business firms, etc. It has developed and produced systems spanning the range from the small micro computer to the medium large computer catering to commercial data processing scientific research and real time applications. It wishes to announce its significant success in translating totally indigenous knowhow into a full-fledged computer industry engaged in development, production, commissioning and field system support and maintenance. Apart from the software applica-

tions developed by it, some of the users also produce their own systems and applications.

Spokesmen for the ECIL say there is no desire on their part to extend the use of computers indiscriminately. According to one stream of thought, the Corporation is not going about aggressively with promoting computerisation through development of special systems and software for them. But its top men claim that they are going about the business on a selective basis and intend extending the use only to segments where manual systems cannot do either because of the need for very high speed or very large body of data, or very high degree of accuracy or precision—beyond the manual systems. They mentioned a host of such applications developed by them—Bhilai Steel for billet cutting, Rajasthan Atomic Power Plant for monitoring of channel temperatures, Kalpakkam Reactor Research Centre for similar monitoring, satellite earth station at Ahmedabad, Sriharikota launching station, etc.

For all the three types of applications—on-line off-line scientific and business applications—ECIL claims to be in a position to supply machines in TDC 312 and 316 systems. It is preparing to introduce commercial data processing on TDC 316 next year for larger requirements in that area. TDC 332—the very large computer (of course, with smaller capabilities than the IBM computer at the Madras IIT)—will also be out in one year from now. Only for computer larger than this should the country look abroad. COBAL has been introduced on 316 and trial runs are on.

It is in the area of peripherals the country would still need to import. The manufacture of these items

should be taken up on a sufficiently large scale without loss of time.

Indian computers have entered the fourth generation with ECIL undertaking the manufacture of the micro computer-78. It is a compact, low-cost, versatile micro computer employing the latest technology, capable of being employed in a variety of applications. According to one estimate, about 75 per cent of the computer requirements of the country could be met through mini-computers (TDC 120). There is perhaps need for establishing a mini computer industry outside ECIL.

The computer's role in to-day's and tomorrow's India is being debated. There are instances where companies which had computerised several of their activities retired from the effort dissatisfied and psychologically scared after incompatibilities, poor programming and misgivings made the task apparently impossible. Some have gone through the frustrating process of repeatedly receiving incorrect bills from a computerised billing department and are unable to get their complaints past the computer. This is a matter for computer specialists and computer manufacturers to look into.

There is a widely held view that large scale computerisation would affect a number of jobs, change the character of many and eliminate a few entirely. The country should be continually on its guard to prevent new uses of the computer from creating unemployment. Government officials, computer experts and businessmen may have to study what new social issues and policy problems could arise as computerisation continues its growth. (Courtesy : The Hindu)

65th Science Congress

(Continued from page 686)

Dr. Jogabrata Roy, President, Section of Statistics, 65th Indian Science Congress is currently Research Professor, in charge of the Applied Statistics, Surveys and Computing Division of the Indian Statistical Institute, Calcutta. He was born on 15th January, 1930 at Dacca. He was educated at the Presidency College, Calcutta from where he obtained a Master's degree in Statistics, in 1950 with a consistently brilliant academic record. He joined the Indian Statistical Institute in 1951 and was awarded Associateship of the Institute in 1953 on the basis of his work on O A B A B blood group distribution in India. He got the D.Phil degree in Statistics in 1957 from Calcutta University on his thesis on multivariate analysis carried out under the

guidance of Professor C. Radhakrishna Rao.

Dr. Roy and his students have conducted research in various branches of theoretical and applied statistics multivariate analysis, design of experiments, sample surveys, econometrics, biometry and psychometry. He has about forty papers published in various journals. Together with I. M. Chakravarti and R. G. Laha, Dr. Roy is the author of the popular Handbook of Methods of Applied Statistics published in two volumes by John Wiley and Sons, New York. Dr. Roy has worked as visiting professor at a number of universities in the USA and visited the UK and USSR and GDR on exchange programmes.

Association with the late Professor P. C. Mahalanobis gene-

rated in Dr. Roy a practical outlook in which statistical methods are considered essential in problem solving. He has been involved in many statistical projects of formulation or evaluation of development plans. Extensive work in consultancy and project guidance in statistical data collection, analysis and interpretation made him interested in the use of electronic computers in statistical work. He initiated and organised the computer centre and courses on computing science at the Indian Statistical Institute.

Dr. Roy is an elected member of the International Statistical Institute, a member of the Governing Council of the National Sample Survey Organisation, India and a Co-editor of the journal SAMPLE SURVEYS—Theory and Practice.

Education—an Adventure of Life

The eleventh convocation of the Madurai University was held on 29th November, 1977 at Palkalai Nagar. Shri P.B. Patwari, Governor of Tamilnadu and Chancellor of the Madurai University conferred the degrees on 10,000 students. He also distributed the university prizes. Dr. K. R. Ramanathan, Emeritus Professor, Physical Research Laboratory was the chief guest. In his convocation address, Prof. Ramanathan laid stress on the primary purpose of the university to bring young seekers of knowledge under the intellectual influence of a band of imaginative scholars and teachers. He said education is discipline for the adventure of life. For this there must be some freshness in the presentation of the knowledge dealt with, and even if the know-

ledge be old, it must be combined in an appropriate way with present day knowledge in the same field so that it comes to the students with a certain freshness of outlook. This can be achieved to some extent by the introduction of the semester system both at the postgraduate and undergraduate levels. Under this system students can offer additional subjects for their regular course work and thus widen their vision. Today, this is very important, as new advances take place in boundary-regions like molecular biology, aircraft and satellite multi-spectral photography and telemetry for the study of plant growth, floods and droughts, environmental pollution, mineral resources, ocean surface temperatures, etc.

Education and Research meet

together in a university. They include scholarliness, discovery and invention. Discovery is the finding of new truths or laws of the physical world, and invention is the application of known truths to meet present and future needs of Society.

In 1958, the Parliament adopted a scientific policy resolution. The aims of the policy were :

1. To foster, promote and sustain, by appropriate means, the cultivation of science, and scientific research in all its aspects, pure, applied and educational;
2. To ensure an adequate supply, within the country, of research scientists of the highest quality, and to recognise their work as an important component of the strength of the nation;

CONVOCATION

3. To encourage, and initiate, with all possible speed, programmes for the training of scientific and technical personnel on a scale adequate to fulfil the country's needs in science and education, agriculture and industry, and defence;
4. To ensure that the creative talent of men and women is encouraged and finds full scope in scientific activity;
5. To encourage individual initiative for the acquisition and dissemination of knowledge, and for the discovery of new knowledge, in an atmosphere of academic freedom; and
6. In general, to secure for the people of the country all the benefits that can accrue

from the acquisition and application of scientific knowledge.

The progressive society requires scholars, discoverers and inventors.

Gandhiji while writing in the 'Harijan' in January 1947 said : "Persistent questioning and healthy inquisitiveness are the first requisites for acquiring learning of any kind. Inquisitiveness should be tempered with humility and respectful regard for the teacher. It must not degenerate into imprudence. The imprudence is the enemy of the receptivity of mind. There can be no knowledge without humility and the will to learn".

Gandhiji discovered truth which, although not new, was new to the world of his day. He not only discovered it, he practised it; he not only practised it, he published it, when he found himself in error even in the smallest detail, he took every possible care to correct that error and to let it be known that he was doing so. Gandhiji had said : "Truth and non-violence are as old as the hills. All I have done is to try experiments in both, on as vast a scale as I could do. In doing so, I have sometimes erred and learnt by my errors. Life and its problems have thus become to me so many experiments in the practice of truth and non-violence".

"This is the scientific method : to seek the truth; to find out (within the limited field of the understanding and control of natural phenomena) by thought and sometimes by inspiration; on a small scale and then on a larger, and to reject, what is in error. To the genuine man of science, truth is all-important. There must be no self-deception, no concealment of facts, no twisting of evidence. Most men would like to have truth on their side, but the real scientist wants to be on the side of truth. And when he has found the truth, even in a narrow and specialised field, the man of science must not keep it to himself, but publish it so that others may judge its scientific integrity, test his facts and methods and go on from where he leaves off. That is what Gandhiji would want his followers to do".

Conference on Adult and Continuing Education

A regional conference on adult and continuing education was held at the Himachal Pradesh University, Simla. Representatives from Universities in the States of Uttar Pradesh, Punjab, Haryana, Jammu & Kashmir, Himachal Pradesh and the Union Territories of Delhi and Chandigarh participated in the conference. The participants included Vice-Chancellors, Professors, Directors of Centres/Departments of Continuing Education, Schools of Correspondence Courses and Deans of Colleges. The conference was sponsored by the University Grants Commission.

The Chancellor of the Himachal Pradesh University inaugurated conference. In his inaugural address the Chancellor underlined the important fact that education was a life long process and that it could not terminate at any point of time. A university must discharge not only its traditional functions of discovering and disseminating knowledge but also the new function of extending knowledge to the community. He stressed that continuous growth was a fundamental characteristics of the 'life of mind'. Continuing Education must, therefore, help each individual to develop his potential to the full. He said that dissemination of information was essential. There was an urgent need to extend the frontiers of fundamental knowledge for which guidelines for action should be formulated.

The key-note address was given by Dr. M.S. Mehta. In his address he presented a short historical view of the development of adult and continuing education in Europe, America and elsewhere. He felt that while extension work came to be accepted as a legitimate activity of the universities in other parts of the world, the Indian landscape of university extension and adult education remained, in con-

trast, rather bleak and barren. He therefore urged upon the universities the need to promote and vindicate their moral and academic purpose and by going closer to the life and problems of rural India which would ensure integrated development of our society.

The conference was divided into eight groups dealing with (1) Man, Society and Education; (2) University and the Community; (3) Continuing Education as a Vitalising Factor in University Education; (4) Dynamics of Adult Learning and Development; (5) Programme Planning and Evaluation; (6) Opening up the Universities; (7) Identifying Educational Needs of the Community; and (8) Why Life Long Education.

The first group was headed by Prof. S.C. Dube, Director of the Indian Institute of Advanced Study, Simla. He pointed out that it was an imperative of the future that we gain meaningful and operational insight into life long education and the inter-relationships that should characterise our approach to man, society and education. He said that the first problem related to the decision-making process who decides for whom? Even if one accepts authority, what kind of authority should it be? Secondly one has to examine the extent to which education has led to mobility and social change. Thirdly, it needs to be considered whether education is serving as a liberating force or whether it leads to the alienation of the educated from the society at large and creates an elite group and a set of privileges. The following points were highlighted in the discussion:

1. Education is a process which begins at birth and terminates with death;
2. Formal and institutionalised education is one sub-set of the total process of educa-

tion. Much more education takes place outside the school; and

3. Education should be viewed as an integrated process rather than a hierarchy.

The second group which was devoted to university and the community argued for a university as a system for discovering, systematising and transmitting knowledge, sharing, however, these three processes with other research organisations and institutions of higher learning, with the difference that unlike these institutions, the area of knowledge pursued by the university is much varied and touches every aspect of nature, life and experience. In his talk to the session, Prof. M.S. Gore, Director, Tata Institute of Social Sciences, said that the growth of technology, the development of human and social sciences and the intense application of science in the present century have changed the dimensions of knowledge. Such knowledge is assuming a more and more significant role to serve a social purpose and to enable man to gain an understanding of himself and his varied environment. It is no longer expected to be limited to a few but is increasingly becoming available to larger and larger numbers of people to provide the basis for their widening awareness of life, its problems and their solution.

Prof. Gore spelled out the programmes through which the universities could and should try to meet community needs and sometimes articulate demands. These are (1) Expanding the traditional forms of education for all age-groups; (2) Developing new forms of education; (3) Programmes of research and consultancy on community problems; and (4) Community contacts, and services by universities e.g. NSS, Graduate Voluntary Scheme etc.

In his talk to the third group on Continuing Education as a Vitalising Factor in University Education, Dr. Amrik Singh referred to the deepening crisis in university education relating to quality and relevance. Continu-

ing education acquires significance in dealing with the crisis of relevance. The general education imparted at the undergraduate level is subject to the law of diminishing returns. For more people are being admitted to the colleges without proper motivation and the job prospects continue to be as bleak as ever. According to him, continuing education would be vitalising factor as it would serve as a feedback in strengthening relevance of the contents of knowledge on the analogy of the consultancy services offered by the departments of business management in different institutions. However the university cannot get involved in an activity where its expertise cannot be utilised adequately. The crux of the problem lies in re-orienting the university and the teaching community.

In the fourth group on Dynamics of Adult Learning and Development, it was emphasised that the general literacy movement should be viewed in relation to the general development strategy. The objectives of literacy movement should also shift to the development of critical consciousness and capability of assertion.

Speaking on Programme Planning and Evaluation, Smt. Kamalini H. Bhansali, Registrar, SNDT Women's University touched upon various aspects of planning, identification of needs, goals, scope, formulation of programmes, monitoring and evaluation, financing, publicity and involvement of concerned agencies and organisations. In the discussion she clarified that the fee structure of continuing education programme in the university was highly flexible. The university, she argued, being a compact unit, it was able to involve resource personnel as well as members of the faculty.

Dr. Asher Deleon, UNESCO Adviser to the Ministry of Education spoke on 'Opening Up the Universities' and referred to the aspects which make our universities a closed community like (a) rigid criteria of admission (b) diplomas and degrees serving as passport for jobs (c) monopoly of

universities for imparting knowledge (d) universities raising mental barriers to social realities around (e) the idea that only knowledge and not action is the concern of the universities and their pre-occupation with fundamental rather than applied research and (f) search for so-called autonomy and not autonomy in relation to the society. Adult education, open university, university without walls, involvement of teachers in socio-economic activities like those of institutes of management and mass media, correspondence courses etc. are some of the trends towards the opening of the universities.

Initiating discussion on Identifying Educational Needs of the Community in the seventh group, Mr. L.R. Shah of the Ministry of Education stated that the first step in identifying the needs is to gather information about the composition of the community. The different sections of the community to be contacted for the purpose are: youth in the age group of 15-25, drop-outs from the schools, colleges etc., working groups comprising workers, fishermen, weavers etc., professional groups, social workers, artists etc. The needs can be identified

through interviews and enquiries, informal conversation, group meetings, contacting employment exchanges and private employers, putting suggestion boxes, issuing questionnaires and conducting surveys etc.

While speaking in the eighth group on Why Life Long Education Prof. S.C. Dube, assumed three hypotheses: (a) knowledge is an essential input for evolving and maintaining a national and world order, (b) solution of human crisis requires intelligent participation by a substantial body of citizens, and (c) exponential growth of knowledge, changing context of life, frequent alterations of the problem of survival and development cover the entire life. He defined three objectives of education viz, (1) to extend the benefits of formal education to those who missed it for some reason; (2) to develop an on-going programme of intensive citizenship education; and (3) to provide for continuous updating and renewal of knowledge. Prof. Dube observed that universities can play an active role in life-long education only if there is a change of attitude, strengthening of motivation of teachers and inner changes in the infra-structure of the universities.

National Agricultural Research Fund Proposed

A national agricultural research fund may be set up with the loan from the World Bank for financing location-specific research in agricultural universities. This was announced by Mr. S.S. Barnala, the Union Minister for Agriculture while addressing the annual general meeting of the Indian Council of Agricultural Research, in New Delhi recently.

The proposed research fund would stimulate growth of research, tailored to the agro-ecological and socio-economic features of each State. While the Council would do its best, the State Governments should step up their support to agricultural research and education.

Mr. Barnala also announced that a number of new projects are

proposed to be taken up. These include a major research centre for rainfed rice in Bihar, operational research projects in deep, medium and shallow water paddy areas; an international cotton institute; new central institutes in the field of buffalo research, goat research, soil research, agricultural economics and agricultural technology; a series of national research centres in oilseeds, pulses animal nutrition, fisheries and in basic research areas like utilisation of solar energy by plants, plant and animal physiology, biological nitrogen fixation and agricultural microbiology and chemicals; a national bureau of animal and fish genetic resources and an agricultural college in Nagaland.

The Minister appealed to the

farm scientists and economists to give greater attention to the area of crop insurance. Apart from attending to tragedies caused by weather aberrations, the country should be prepared to get the maximum benefit from good seasons and minimise the adverse impact of abnormal weather. This would call for a considerable strengthening of research in agrometeorology and for the development of alternative cropping strategies for different weather conditions. During the next plan starting from April 1, 1978, every effort would be made to strengthen research in pulses, oilseeds and cotton to make a concerted attempt to develop high-yielding and high stability varieties in these crops. Through the combined national and international endeavour, a substantial progress is expected in the coming years. There is a proposal for the establishment of an International Cotton Institute in India especially for rainfed cotton and for providing facilities for the location of the headquarters of the International Council for Research in Agro-Forestry.

Several collaborative programmes of research with Philippines and with the South East Asian Fisheries Development Corporation had been established. There has also been an agreement to assist the West African Rice Development Association in their efforts to improve the yield of rice in West Africa. Under a protocol signed recently in Moscow, Indian and Soviet Agricultural scientists will undertake joint plant collecting expeditions in Central Asia. It is proposed to collect almond, walnut and other nuts. At the request of Government of India, the ICAR is assisting in the establishment of research centres for rice and buffalo improvement in Vietnam.

Calicut plans studies in Maritime History

Efforts have been made for quite sometime to institute studies in universities in the maritime history of India from pre-history to the modern times. There is a all round academic consciousness

that Indian maritime history has had a glorious past and there have been few books that describe in detail the role played by Indian sailor in international intercourse and its effect on our own traditions, culture and civilisation.

Sardar K.M. Pannikar's exposition on the Indian Ocean is still the main authoritative study on the subject. The University Grants Commission would be prepared to help the universities that would sponsor maritime studies by its teaching staff. A two-three years study on a given aspect could be funded by the Commission. There is considerable material available in Madras on the military aspects of maritime tradition with graphic details of the wars fought in the region. Much material could also be gathered from India House in London.

A case in point is the ezhavas of Kerala. According to one interpretation, under the stress of the

with the Kerala coast from pre-historic times.

PAU in support of farm mechanisation

According to Dr. A.S. Kahlon, Dean, College of Basic Sciences and Humanities, the process of progressive farm mechanisation in the country needs to be reviewed in the context of the development-oriented mechanical technology. Dr. Kahlon has made a detailed study of the subject and he feels that such developments could not be economically secured by adding more pairs of bullock or more human labour on the farm.

The study emphasised that a progressive productive and profitable agricultural strategy depends upon the adoption of integrated biological, chemical and mechanical innovations.

Punjab produces about 20 lakh tonnes of rice. Paddy-cum-wheat rotation has assumed critical im-

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times some of the people left the shores of the country to seek their fortunes elsewhere. The act of leaving the country had rendered them outcastes to their society. The history of their movement to areas in Sri Lanka and elsewhere is considered to be an important link in the study of development of the civilisation in that State. From the naval point of view too there are incongruities that have been handed down to the Indian Navy by the British which could perhaps be supplanted by Indian tradition.

The Calicut University has evinced keen interest in this field of study and has suggested five projects—historical survey of the sea-side fortresses in Kerala; naval terminology used on the Kerala coast; ship-building activity on the Kerala coast; naval encounters off the Kerala coast; and history of the external maritime contact

portance in the State's system of farming. As a result of an increase in the area under paddy followed by wheat, the need for timely seed-bed preparation of wheat assumes critical importance because of delayed harvest of paddy crop. Again, the paddy transplantation has been advanced by three weeks to improve its level of yields. Without tractor, these operations cannot be completed on time and any delay in the timely performance of these operations means substantial loss in production. The study therefore suggests that the main purpose of tractorisation should be to displace bullock labour so that the fodder grown could be utilised for adequate feeding of milch cattle with a view to diversifying agricultural economy. There are many lessons to be learnt from the story of mechanisation in Punjab. The much maligned trac-

tors did not come first. Once the farmers realised that the new seed-fertilizer technology (commonly known as the Green Revolution) could not be carried very far without expanding irrigation. They made capital investment in installing pumping-sets and tube-wells first. When they found it difficult to break hot summer's labour peaks with human and bullocks power, they took to mechanisation of threshing operations. The study says that about seven million hectares of land is affected by alkalinity and salinity in the country. It's reclamation would be difficult without augmenting mechanical power on these lands. Moreover land levelling and land shaping cannot be facilitated without tractorisation.

Modernisation of Biology programmes

A two-day seminar to frame coordinated syllabi for teaching of biology at undergraduate level was inaugurated in Bhagalpur recently by Dr. S.P. Sinha, Deputy Chairman, Bihar State Inter-University Board.

The seminar was attended by a large number of teachers of Biology from different universities of Bihar. Mr. M.A.M. Gilani, Vice-Chancellor of Bhagalpur University welcomed the participants and commended the efforts of the Inter-University Board for the steps it had taken for modernisation of courses. He stressed the need for similar efforts in the field of social sciences and humanities.

Dr. S.P. Sinha in his inaugural address explained the point of view of the State Government and emphasised the importance of curricular programmes in shaping the future of students. He pointed out that very soon every University of Bihar will be having a leadership project of the University Grants Commission in science subjects. He stressed the importance of re-orientation of teachers, improvement in the method of examination and discussed the various proposals made by the University Grants Commission in this connection.

Prof. B.M. Johri of Delhi University was of the view that any im-

provement in teaching is possible only if the laboratories in the schools and colleges are well equipped and new methods in teaching are followed. He suggested that the grants for science teaching in colleges should be determined on the basis of the intake of the students in a particular session. Moreover the Government should review the performance of science teaching in colleges periodically and such colleges which are not up to the mark should be disaffiliated. The sub-standard colleges are always a drain to the nation. Regarding biology teaching, Prof. Johri was of the view that 30 per cent of the practical classes should be held under field conditions as it was a dynamic subject and could not be studied under closed conditions.

Prof. K.S. Bilgrami, Head of the P.G. Department of Botany of Bhagalpur University emphasised the social relevance of biology teaching and its importance in framing job-oriented and self-reliant courses.

15th annual conference of the Institute of Historical Studies meets at Madurai

The Fifteenth Annual Conference of the Institute of Historical Studies was held at Madurai University recently. Prof. S.V. Chittibabu, Vice-Chancellor, Madurai University and Dr S.P. Sen, Director of the Institute of Historical Studies welcomed the delegates. Prof. Ram Rahul of the School of International Studies, Jawaharlal Nehru University, read the presidential address in the absence of Dr. K.K. Pillai, Director of the Institute of Traditional Cultures, Madras. Over fifty delegates from all over India participated in the conference. About twenty papers were presented and discussed. The courses of the ancient, medieval and modern history of Tamil Nadu were also debated. The social changes in modern India from the middle of the 18th to the middle of 20th century were also brought about. The region-wise social changes were also discussed in the conference from different angles. Prof. K. Rajayyan of the School

of Historical Studies was the Secretary of the conference.

Agricultural University taken over

The Bidhan Chandra Krishi Vishwavidyalaya, Kalyani, has been superseded by the West Bengal Government and its Board of Management has been dissolved. Dr. M.M. Chakravarty has been appointed as the new Vice-Chancellor in place of Dr. S.B. Chattopadhyaya. A twenty-two member committee consisting of ten senior officials and ten teachers will soon be appointed to assist the State Government in running the university. Dr. M.M. Chakravarty will be the chairman of this committee. The Government also proposes to hold a full inquiry into the affairs of the university through a senior member of the judiciary.

Work of Advanced Study Centre at Simla to be reviewed

Prof. A.K. Das Gupta, Hony. Professor, Jawaharlal Nehru University, New Delhi, will be the Chairman of the committee appointed by the Government of India to review the functioning of the Indian Institute of Advanced Study, Simla. The committee will see the functioning of the Institute from 1969 and make such recommendations as might be necessary in regard to future policy, programmes and activities of the Institute. The other members of the committee are: Dr. H.D. Sankalia, Professor Emeritus, Deccan College Postgraduate and Research Institute, Pune and Shri T.N. Chaturvedi, Chief Commissioner, Union Territory of Chandigarh. The committee is likely to submit its report by April, 1978. Mr. C.R. Pillai of the Education Ministry would be the Secretary of the committee.

PM to inaugurate AIU Conference on Restructuring of Education

The Prime Minister, Shri Morarji Desai, would be inaugurating the 53rd annual meeting of the Association of Indian Universities to be held at Rajkot on

January 15 and 16, 1978. On this occasion, Shri Desai would be having discussion with the Vice-Chancellors and other educationists regarding the restructuring of higher education in the country in the context of present day needs. The Indian Universities Association for Continuing Education would also be holding its session on the 14th January, 1978. A large number of Vice-Chancellors and educationists would be attending these sessions.

JNKV acquires microcomputer system

A microcomputer system (DCM-1121-CT) was inaugurated at the Instrumentation Centre of Jawaharlal Nehru Krishi Vishwa Vidyalya recently. While inaugurating the system, Prof. S.V. Arya, Dean of Agricultural Engineering, said that the Microcomputer would prove a powerful tool in analyzing complex research data in the fields of agriculture, veterinary and agricultural engineering. He added that the system would be equally useful for optimizing irrigation, farm mechanisation, farm operations, fertilizer applications etc.

Shri B.P.L. Narasimhan of DCM Data Products said that the Microcomputer was a tailor-made system for agricultural institutions. All the statistical oriented applications such as analysis of variance, multiple linear regression, standard deviation, curve fitting, etc. as well as the scientific computations could be handled on the System. He informed that the System is provided with magnetic digital tape cassette for backup storage of about 4 lacs programme steps and an electric teleprinter for obtaining the results in tabular form.

Dr. J.H. Agrawal, Director of Instrumentation, said that the System effectively combined the assessability and ease of operation associated with programmable calculators and the speed and power of large scale computers. Another special feature of the System, he said, was that it operated on algebraic logic and there was no need to learn the complicated computer languages.

New study centres under Kerala University

The University Grants Commission has sanctioned three new study centres under the Kerala University. These will be located in Alleppey, Kottayam and Palai. The Kerala University has already two centres at Quilon and Changanacherry. These centres will have libraries and reading rooms for the benefit of students in those areas.

Examination reform centres

The University Grants Commission has selected twelve universities in the country for implementing the examination reform plan. The universities are : Aligarh, Andhra, M.S. Baroda, Panjab, Gauhati, Rajasthan, Jadavpur, Poona, Sagar, Mysore, Madras and Calicut. These universities will be assisted in setting up cells for carrying out various examination reforms suggested by the Commission. A committee has already been constituted for the implementation of this plan. The Commission has suggested earlier the introduction of a "grading system" in place of the present system of evaluation of scripts through marks. A continuous process of internal assessment in the colleges has also been recommended in addition to the regular examination. The plan also envisages the setting up of question bank. Thus the question paper can vary from student to student. If the suggestions to have the questions printed on cards is adopted, the student can pick up any of these cards.

Visva-Bharati to launch new projects

The Visva-Bharati University authorities have undertaken several new projects. The Vice-chancellor, Dr. Surajit Sinha said that these would lay emphasis on social sciences based on studies in the rural areas and on a language programme.

One of the most important pro-

jects was the formation of a Centre for Rural Studies which would conduct researches in rural transformation. It will introduce a postgraduate course in anthropology and rural development. The Centre will function in collaboration with the Departments of Economics, Political Science, the Agro-Economic Research Centre and the Palli Sangathan Bibhag.

According to the Vice-Chancellor, an appraisal of the Santhal community would be "one focal area of continuous research." He also said that "we are particularly interested in finding out how the emerging Santhal intelligentsia are looking upon their social and cultural situation." He said such a study had not been undertaken before. A two-year certificate course in the Santhali language has also been started.

The Vice-Chancellor said that Visva-Bharati had received "substantial grant from the University Grants Commission. With this the authorities plan to start a school of social work at Sriniketan, a school of life science and a school of historical studies.

In the language section, courses in Russian, Italian, Marathi, Tamil and Assamese are being introduced.

Dental conference at Calcutta

The 13th state Dental Conference was inaugurated by Mr. Nani Bhattacharyya, West Bengal Minister for Health at Calcutta. He informed that the State could not introduce a three and a half year condensed MBBS course for dentists. The approval of the Medical Council of India had to be obtained. Calcutta University has however accepted the proposal in principle and had framed necessary regulations and a syllabus. He assured dentist that introduction of a Postgraduate course in dentistry would however present no problem. The problem of space had been solved and the course would begin soon. He promised also to look into the supply of pre-clinical instruments.

Dr M.K. Chhetri, Director of Health Services, deprecated the 'clamour' for a condensed MBBS course. Dentists would do their profession a disservice if they go in for it, he opined. The emphasis should rather be on a full-fledged MBBS course followed by specialisation in dentistry. He stressed the importance of community health care in rural areas where dentists could render a vital service.

New computer for Kerala University

Kerala University has acquired a new computer for its computer centre at Trivandrum. The new TDC-316 which was installed in the University computer centre is an advanced system equipped with high speed peripherals and other components. Already the University has an IBM-1620 second generation system. The computer centre under the university was established in 1974 to promote research in science and technology.

Poultry Symposium to be held at Jabalpur

The Indian Poultry Science Association would hold its annual symposium at Jawaharlal Nehru Krishi Vishwa Vidyalaya from January 15 to 17, 1978. About 150 scientists from various parts of the country and from abroad are expected to participate. The theme of the symposium would be: "Poultry for the poor". The Indian Branch of World Poultry Science Association would also hold its meeting on this occasion. The symposium would include a session for discussion on: peoples participation in raising the socio-economic status of the people below poverty line by poultry keeping.

Instrumentation facilities developed at Madurai

The central instrumentation and services laboratory has been established at the Madurai University with the assistance of the University Grants Commission. The main aim of the laboratory is to house the sophisticated equipment and instruments which will be used by all the science faculties.

The laboratory is responsible for maintaining and servicing instruments located in various departments. Services of this laboratory will also be available to the affiliated colleges of the university.

Constructed at a cost of Rs 1.5 lakhs the laboratory was declared open by the Tamilnadu Governor and Chancellor of the University, Shri P.B. Patwari. On this occasion the Vice-Chancellor, Prof. S. V. Chittibabu, explained briefly the progress of the university during the last eleven years. He also appreciated the financial support provided by the U.G.C. in establishing the laboratory.

Industrial pulps and drugs extracted from plants

Scientists of the National Chemical Laboratory, Poona have shown that some Indian plants can yield rayon grade pulp and drugs. They have succeeded in obtaining several useful chemicals of industrial importance from Indian plant sources. Mesta stems (*Hibiscus cannabinus*) and *Dalbergia paniculata* wood have given excellent chemical pulp. *Boswellia serrata* gives standard quality pulp for rayon yarn. The NCL scientists are also testing cotton linter pulp for viscos rayon. In another experiment, NCL scientists have obtained a chemical parthenium from *Parthenium hysterophorus* which is known to possess anti-cancer activity. A number of parthenium derivatives have been prepared which will be tested at the Cancer Research Centre, Bombay for their anti-cancer activity.

Another team of scientists at the NCL has obtained vanillin from groundnut shell which is an agricultural waste available in large quantities in the country. The process is being developed for obtaining maximum yield of this important industrial chemical.

Flavones (plant colours) have been obtained from the bark of *Morus alba*.

Scientists at NCL are also testing whether neem can be added to soil with fertilizers for better use of nitrogen by plants.

Several extracts of neem oil have been tested and the extract showing the maximum effects on slow release of nitrogen to the soil has been identified. The main component is oleic acid. If the experiment succeeds, considerable quantities of urea can be saved by adding neem oil or neem cake to the soil.

Another group of scientists at the NCL has developed a process for the manufacture of quinapyramine sulphate and quinapyramine chloride which are valuable veterinary drugs to prevent loss of cattle due to trypanosomiasis.

The entire quantity of these drugs costing nearly one crore rupees in foreign exchange is imported at present. The NCL process is ready and will soon be offered to industry.

Two alkaloids Vincristine and Vinblastine have been obtained from *Vinca rosea* (Sadaphuli) leaves which have been proved to be effective against leukemia. Work on the isolation of the alkaloids from plant using modern methods of chromatography is in progress.

Madurai develops Indo-German project

The Minister of Education of Tamilnadu and Pro-Chancellor of Madurai University inaugurated the Indo-German Project on Animal Behaviour at the Madurai University. The project was organised by the School of Biological Sciences of Madurai University in collaboration with the Department of Biology of J.W. Goethe University in the Federal Republic of Germany. The project envisages not only collaboration in research on the behaviour and ecology of bats, but also proposes to conduct at Madurai a 6 week course on Neurophysiology and Animal Behaviour.

Prof. S.V. Chittibabu, Vice-Chancellor of Madurai University has all along shown a keen interest in the progress of this project. The efforts of Professor S. Krishnaswamy, Jawaharlal Nehru Fellow, Dr. A. Gnanam, Coordinator of the School of Biological Sciences and the generous assistance of the various

scientific and cultural organisations made this project possible.

The project is funded by the University Grants Commission, the German Academic Exchange Service, the German Research Society and the Alexander von Humboldt Foundation.

Farm management seminar

A seminar on marketing of agricultural inputs and services was held at the Punjab Agricultural University. It was organised by the National Productivity Council in collaboration with the Department of Business Management of the PAU. More than fifteen senior level executives from private and public sectors and government organisations attended the seminar.

While inaugurating the seminar Dr. A.S. Kahlon, Dean, College of Basic Sciences & Humanities, PAU, said that due importance should be given to farm management to secure the optimum results from farm organisations. It was not enough to grow high-yielding varieties or expand area under irrigation. He said that there was an urgent need to review the role of the modern technological inputs as a complete package rather than emphasizing the importance of individual inputs.

Analysing the situation of modern technological inputs that go into the production of agriculture, Dr. Kahlon emphasised that the proportion of purchased inputs had increased very rapidly during the past ten years and this has led to a happy development of farmers becoming more conscious of the pay off that they got from different investments and particularly the need for greater supervision and managerial input associated with the modern agriculture.

The use of chemical fertilizer, he said, was still restricted to a small number of districts in the country. He maintained that there should be a better spread of fertilizer use to remedy this malady. In most of the cases one or at the most two crops were fertilized in a season. Underlin-

ing the importance of subsidies on fertilizers he mentioned that Punjab's experience showed that 25 per cent subsidies on phosphate fertilizers and 50 per cent subsidies on zinc sulphate not only increased the use of these fertilizers but also expanded the application of nitrogenous fertilizers, resulting in about 20 per cent increase in food production.

Dr. Kahlon called upon the research workers to work out the economics of balanced fertilizer use and optimal fertilizer constrained rates, as distinguished from optimal economic rates.

Earlier, the Regional Director of National Productivity Council, Mr J.S. Saraon, said that the main object of the seminar was to create an understanding of various aspects and problems associated with the market, market environments and marketing strategy to be adopted for marketing of agricultural inputs and services.

New technologies for fighting pests

Indian scientists have been able to find suitable technologies to produce pesticides against insects which are harmful to crops and animals. Certain chemicals have been found which can kill pests like mites, spiders, weeds and fungi that cause enormous loss to crops in the country every year.

Endosulfan, an insecticide developed by the National Chemical Laboratory, Poona is now in the process of commercial production in the country. It has been found to be effective against a wide range of agricultural pests. The NCL has now 4 more insecticides to arm the farmers against pests. They are: Fenitrothion, Dimethoate, Chlordane, Imidan. Fenitrothion, Contact insecticide, can be used for controlling chewing insects of rice, vegetables, cereals and orchard fruits. Pilot plant trials have shown great success and the technology is ready for commercial utilisation. Dimethoate is effective against a wide range of insects and mites of cereals and fruit crops. A

process engineering package for industrial plant has been prepared including the know-how for effluent problems. The technology is ready for commercial utilisation.

Chlordane is effective against bawn and home termites. The process has been tested on pilot plant and is ready for commercial utilisation.

Imidan is used in controlling pets which are usually encountered during cultivation of paddy. The process is ready for use in cotton and sugarcane fields and for removal of aquatic weeds in tea gardens.

An effective fungicide developed by the laboratory is Carboxin. It kills harmful fungi without harming crops. This fungicide is not manufactured in India, but the present demand is met through import. The NCL technology is now ready for commercial utilisation.

To induce growth in rubber plants the NCL has developed a chemical Dthephon, an effective plant growth regulator. Process package for the knowhow is under preparation and will be released to the industry shortly.

Parthenium is an obnoxious widely spread weed which causes allergy and poses threat to animals and crops. Each plant produces thousands of seeds, which are spread by wind resulting in infestation of new areas.

Conventional methods for controlling Partheni may have several drawbacks and limitations. A process for such a herbicidal formation to control Parthenium has been developed by NCL.

University News

**Wishes
its readers**

**A Happy New
Year**

HIMACHAL PRADESH UNIVERSITY SIMLA-171005

'Recruitment Branch'
Advertisement No. 5/77

Applications are invited for the following posts:

Agricultural Complex

1. Director of Research
2. Director of Extension Education
3. Professor of Animal Science

University Teaching Departments

4. Professor of History
5. Professor of Psychology
6. Associate Professor of Music
7. Assistant Professor of Law

University Offices

8. Registrar
9. Controller of Examinations
10. Planning and Development Officer

University Dispensaries

11. Medical Officer (G.D.O. I)

Pay scales and essential qualifications

For posts at Sl. No. 1 & 2: Rs 1500-60-1800-100-2000-125/2-2500 with rent-free accommodation or an allowance of Rs 250 per month in lieu thereof.

Ph.D. or an equivalent degree; five years' post-graduate teaching or five years teaching of Honours Classes or five years' post-doctoral research in a university or a research institute and distinguished research work.

For posts at Sl. No. 3 to 5: Rs 1500-60-1800-100-2000-125/2-2500.

Essential qualifications are same as for Sl. No. 1 & 2 above.

For Sl. No. 6: Rs 1200-50-1300-60-1900.

Ph.D. or an equivalent degree; two years' post-graduate teaching or two years teaching of honours classes or post-doctoral research in a university or a research institute; and distinguished research work.

For Sl. No. 7: Rs 700-40-1100-50-1600.

- (a) Ph.D. or an equivalent degree or published work of an equally high standard in the subject; and

- (b) having consistently good academic record with first or high second class (B plus) Master's degree in law, or an equivalent degree of a foreign university.

For posts at Sl. No. 8 & 9: Rs 1500-60-1800-100-2000.

Master's degree in any faculty, with 10 years experience as a Principal in a college affiliated to or maintained by a university.

OR

Teaching experience as a Reader in a university for at least five years.

OR

Master's degree in any faculty, with five years' experience as a Deputy Registrar or in an equivalent post in a University or Board of School Education.

OR

Master's degree in any faculty, with five years' administrative experience in the Central or a State Govt. Administrative Service.

OR

Master's degree in any faculty, with five years managerial experience in an autonomous corporation or public undertaking.

OR

Master's degree in any faculty, with at least five years' experience at the bar. For post at Sl. No. 10: Rs 1100-50-1600.

Has held the rank of a Principal of a degree college with 5 years' experience or of a Reader in a recognised university or of a Senior Lecturer in senior grade with 10 years teaching experience.

Upper Age Limit

60 years.

For post at Sl. No. 11: Rs 900-50-1150/50-1300.

The appointee will not be allowed private practice, but entitled for non-practising allowance at the rate of 33-1/3%. If the service is more than 10 years will be entitled at 50% of his basic pay subject to maximum of Rs 600. The post is reserved for male candidate and shall have to join duties at Simla.

A recognised medical qualification included in the First or Second Schedule or Part II of the Third Schedule (other than licentiate qualifications) to the Indian Medical Council Act, 1956. Holders of educational qualifications included in Part II of the Third Schedule should also fulfil the conditions stipulated in Section 13(3) of the Act *ibid*. The candidates should possess five years experience after registration as Medical Graduate.

The above scales carry with them usual allowances and benefit of C.P.F./G.P.F. etc. in accordance with the rules of the University.

Higher start in the grade is admissible on the basis of special qualifications and experience.

Applications should be made on the prescribed form obtainable from the Registrar by sending a self-addressed stamped envelope (size 23 x 10 cms) and applications complete in all respects together with a crossed postal order of Rs 7.50 (not applicable in case of those applying from outside India), drawn in favour of the Finance Officer, Himachal Pradesh University, should reach the undersigned by the 25th January, 1978. A person applying for more than one post should send a separate application for each post.

Note: Applications for the post of Sl. No. 6 in response to our advertisement Nos. 11/76, 15/76 and 3/77 need not apply again. They may, however, send additional information, if any.

A.S. Bajwa
REGISTRAR

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INDIAN INSTITUTE OF TECHNOLOGY KANPUR KANPUR-208016

Advertisement No. 28/77

Applications are invited for four faculty positions in the Department of Humanities and Social Sciences of the Institute in the following pay scale:

Professor: Rs. 1500-60-1800-100-2000-125/2-2500

Areas of Specialization:

Economics: Econometrics and/or industrial economics

English:

Literature: Theory and methodology of teaching literature and modern American Drama and/or modern American Fiction and/or Modern British Literature. Preference will be given to those who have worked in the field of Indian Literature.

Linguistics: Linguistic Theory, Syntax, Semantics and Pragmatics and/or Applied Linguistics (with special reference to contrastive and error analysis) and teaching of English in India.

Desirable: A background in the Philosophy of Language, and/or Psycholinguistics and/or literary criticism.

Philosophy: Modern logic (with adequate knowledge of model logic) and/or analytic philosophy and/or philosophy of Social Sciences and Philosophy of Science, Social-Political and/or Indian philosophy.

Desirable: Knowledge of Indian Logic and ability to pursue inter-disciplinary work in cooperation with Humanities and Social Science, and/or Science faculty.

Psychology: Experimental psychology (Quantitative and Experimental Design), Organisational Behaviour, Personality, Experimental Social Psychology.

Qualifications

Doctorate degree with good academic record and at least eight years of professional experience of good quality outside the work for the degree. The candidates must have demonstrated ability of independence in teaching and research with significant contribution in the area of specialisation evinced by the adequate number of research publications of good quality in journals of repute based on the work outside the candidates own thesis.

The Indian Institute of Technology Kanpur has well equipped laboratories and central facilities. The Institute has a large computer centre with IBM 7044, IBM 1401, IBM 1800, PDP-1 systems with interactive graphic terminals and TDC-316 and a group of experienced programmers. The Institute has well stacked library with more than 150,000 volumes and 1,300 periodicals. The central facilities include 2 MV Van de Graaff accelerator, 4096 multi-channel analyser and other radiation detection equipment liquid nitrogen and liquid helium plants, NMR,

EPR, Mass Spectrometer, X-Ray plant, TV and IR spectrometers, glass blowing shop, crystal growth facility, central Instrumentation laboratory, precision machine shop, electron microscope besides a large workshop for fabrication of specialised research apparatus.

There is an Advanced Centre for Electronic Systems at the Institute. The Centre has been sponsored by the Ministry of Defence to carry out training and unclassified research and development work in the areas of communication and radar. Besides, an Advanced Centre for Materials Science has been established recently at the Institute by the Government of India to undertake research in the frontiers of development on materials of national importance.

The Campus facilities include a Primary and Higher Secondary School, a Health Centre and Shopping Centre.

Posts are permanent and carry retirement benefits in the shape of CPF Scheme or GPF-cum-Gratuity Scheme or GPF-cum-Pension-cum-Gratuity Scheme as may be opted according to rules. The age of retirement is 60 years. During the first year, the appointment will be on probation. Besides pay, posts carry allowances according to the Institute rules, which at present correspond to those admissible to the Central Government employees stationed at Kanpur. Higher initial pay is admissible to exceptionally qualified and deserving candidates. Candidates called for interview will be paid second class railway fare from the place of duty to Kanpur and back by the shortest route.

Applications from within India must be made on prescribed form obtainable free of charge from the Registrar of the Institute by sending a self-addressed unstamped envelope of 25 cm x 10 cm size. Applications should be accompanied by a postal order for Rs 7.50 (1.87 for SC/ST candidates).

Applicants from abroad may apply on plain paper enclosing a complete bio-data and names of three referees from whom reference letters may be obtained.

Applications should reach the Registrar, Indian Institute of Technology IIT Post Office, Kanpur-208016 (India) on or before 21st January, 1978.

GURU NANAK DEV UNIVERSITY AMRITSAR

Advertisement No. 26/77

Applications are invited for the following posts on prescribed form obtainable (free of cost) from Office of the Registrar, Guru Nanak Dev University, Amritsar by making written request accompanied by self-addressed stamped envelope of 23 x 10 cms. so as to reach this office by 18.1.1978 alongwith crossed postal order(s) for Rs 7.50 for posts at Sr. No. 1 to 4 and Rs 5/- for posts at Sr. No. 5 & 6 drawn in favour of Registrar, Guru Nanak Dev University, Amritsar. Application fee is not refundable.

Note: Persons already in employment must send their application through their employer.

Grade: (plus allowances as admissible under University rules)

1. Professor of Biology (Rs. 1500-60-1800-100-2000-125/2-2500)

2. Readers in (i) Economics (2) and (ii) Biology (3) (Rs. 1200-50-1300-60-1900)

3. Lecturer in Commerce for Guru Nanak Dev University Evening College, Jullunder. (Rs 700-40-1100-50-1600).

4. Programme Co-ordinator (N.S.S.) (temporary) (Rs 700-50-1000-50-1250)

5. Research Assistant in Biology (Rs 300-25-350-25-400-30-610-30-640-40-800)

6. Research Fellow-cum-Demonstrator in Biology (Rs 400/- p.m. fixed) + Rs 100/- demonstration allowance.

Qualifications

For post at Sr. No. 1: An eminent scholar with published work of high quality actively engaged in research. Ten years' experience of teaching and/or research. Experience of guiding research at doctoral level. OR An outstanding scholar with established reputation who has made significant contribution to knowledge.

For posts at Sr. No. 2: (A) Good academic record with a doctoral degree or equivalent published work. (B) Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials. (C) About five years' experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position. (This condition may be relaxed in the case of candidates with outstanding research work.)

For post at Sr. No. 3: (A) A Doctor's degree or research work of an equally high standard; (B) Consistently good academic record with 1st or high 2nd class (B in the seven point scale) Master's degree in a relevant subject or an equivalent degree of a foreign University.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of qualifications prescribed in (B) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a consistently good academic record (weightage being given to M. Phil or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Explanation: Candidates for being eligible for recruitment to the posts of Lecturers must have a 1st or high 2nd class (B in the seven point scale) at the Master's level and for determining consistently good record, average of 50-55 per cent may be expected at the two examinations prior to the Master's examination.

For post at Sr. No. 4: (i) First or Second Class Master's degree or an equivalent qualification from a recognised University. (ii) At least 5 years experience of teaching and educational administration; and (iii) experience of organising extra curricular programme.

For post at Sr. No. 5: (i) Good academic record with (b+) Master's degree in Biology. (ii) Research experience/apptitude for research.

For post at Sr. No. 6: (i) First or High Second Class Master's degree in Biology with good academic record. (ii) Aptitude for research.

SPECIALIZATIONS

For posts of Professor and Readers in Biology: Ecology/Animal, Plant or Cell Physiology/Experimental Embryology / Biochemistry / Biosystematics/ Genetics/Population Biology/Molecular Biology/Microbial Genetics or any other modern and inter disciplinary area in Biology.

For the posts of Readers in Economics: Economic Statistics and Econometrics/Agricultural Economics/Industrial Economics/Money and Banking/Public Finance.

Mohinder Singh Randhawa
REGISTRAR

PANJAB UNIVERSITY
CHANDIGARH

Advertisement No. 36/77

Applications are invited for the following posts along with postal orders for Rs. 7.50 each, so as to reach the Registrar, Panjab University, Chandigarh, by 16.1.1978.

1. Reader in Laws (Labour Law)...One Pay-scale: Rs. 1200-50-1300-60-1900

Qualifications Essential

Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

About five years' experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding research work.

Desirable

(i) A post-graduate degree in Business Administration or Commerce or Psychology or Sociology or Economics or Public Administration or Social Work or Diploma in Labour Laws.

(ii) Experience of practice in the field of Labour Laws or experience in an executive or administrative capacity in any Labour Department/institution/industrial concern.

(Continued on page 701)

RESEARCH PERSONNEL

As below are required at the Indian School of Mines which is deemed to be a University under the UGC Act, for the following projects.

Department of Engineering and Mining Machinery

- | | |
|---|------------------------|
| I Thyristor drives in mining industry—ISM project. | One Research Associate |
| II Design and development of slurry pump to tackle high specific gravity fluids—ISM project. | One JRF |
| III Optimal design of material handling system for coal handling/coal preparation plants—ISM project. | One JRF |

Department of Applied Geology

- | | |
|---|------------------------|
| IV Geological investigations of Sukinda ultramafic belt—DS and T project (for two years). | Two JRF's |
| V Geological studies for locating and developing mica in the Bihar mica belt (interdisciplinary with a Geophysics project)—UGC project. | Two JRF's |
| VI Stratigraphic, tectonic and geochronologic investigations in precambrian mineralised belts in certain critical areas—ISM project. | One Research Associate |

Department of Applied Geophysics

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| VII Groundwater studies over metamorphic and sedimentary area in East India—ISM project. | One Research Associate |
| VIII Telluric and magneto-telluric studies on crustal features in Eastern India—ISM supplement for UGC project (for two years) | One JRF |
| IX Ground-water studies over metamorphics around Dhanbad—ISM project. | One JRF |

Department of Chemistry Fuel and Metallurgy

- | | |
|--|------------------------|
| X Catalytic properties of semiconductors—ISM project. | One JRF |
| XI Corrosion prevention of underground Mining equipment and accessories—CSIR project (for two years) | One SRF |
| XII Development of Software and hardware for process control computer—ISM project. | One Research Associate |

Department of Physics and Mathematics

- | | |
|--|---------|
| XIII Studies in binding-energy of even and odd-mass nuclei and application of non-locality of nuclear force—ISM project. | One SRF |
| XIV Study of the spectra of diatomic molecules of rare earth elements—ISM project. | One JRF |
| XV Study of stability, buckling and fracturing of rocks under initial stresses—ISM project. | One JRF |
| XVI Use of prior information in statistical inferences—ISM project. | One JRF |

2.1 One third of the assignments are reserved for SC/ST candidates, they would however be thrown open if suitable SC/ST candidates are not available.

2.2 All assignments (except where mentioned otherwise) are for a duration of three years. However, the offer in the first instance would be made for a period of one year, and would be renewed only after a review of performance.

2.3 Selected candidates will be required to register for the M.Tech degree (by research) in case of those holding engineering qualifications and for M.Phil/Ph.D degrees in case of others.

2.4 Value of Fellowship/Associateship :

(1) Under ISM & UGC schemes, (a) *Junior Research Fellowship* : Rs. 400/- p.m. for first two years and Rs. 500/- p.m. for third year (if progress is satisfactory), with a contingency of Rs. 1500 per annum; (b) *Senior Research Fellowship* : Rs. 600/- p.m. with a contingency of Rs. 2,000/- p.a. (c) *Research Associateship* : Rs. 1,000/- or Rs. 1200/- or Rs. 1,400/- p.m. (consolidated) depending on the qualifications and experience of a candidate, with a contingency of Rs. 2,000/- per annum. (2) under CSIR scheme (a) *Junior Research Fellowship* : Rs. 400/- p.m. with a contingent grant of Rs. 1,500/- per annum; (b) *Senior Research Fellowship* : Rs. 500/- p.m. with a contingent grant of 2,000/- per annum.

3. Qualifications and Experience

3.1 Junior Research Fellows

- | | |
|--------------------|---|
| Projects II & III | : B.Tech degree (or equivalent) in Mech. Engg. |
| Projects IV & V | : M.Sc. degree in App. Geology/Geology. |
| Projects VIII & IX | : M.Sc. degree in App. Geophysics/Geophysics. |
| Project X | : B.Tech degree (or equivalent) in Chem. Engg. or M.Sc. degree in Physical Chemistry. |
| Project XIV | : M.Sc degree in Physics (with specialisation in Spectroscopy) |
| Project XV | : M.Sc degree in Mathematics. |
| Project XVI | : M.Sc. degree in Statistics. |

3.2 Senior Research Fellows

- Project XI : M.Sc. degrees in Physical Chemistry (with about two years research experience in appropriate field)
- Project XIII : M.Sc. degree in Physics or Mathematics (with research experience of about two years in appropriate field).

3.3 Research Associate

- Project I : M.Tech. degree (or equivalent) in Elec. Drives/Power Electronics/Industrial Electronics, with two years experience in teaching/research/industry in the relevant field.
- Projects VI & VII : Ph.D. degree in Geology/App. Geology or Geophysics/App. Geophysics, as the case may be with research experience in the relevant field.
- Project XII : Master's degree (or equivalent) in Computer Science or Instrument Engg. with about two years experience in appropriate field.

In all cases, candidates must have obtained at least 60% marks in the qualifying examination relaxable to 50% in case of SC/ST candidates and of other candidates otherwise considered specially suitable.

4. AGE : Normally not more than 30 years in case of JRF and SRF and 35 years in case of Research Associate.

5.1 Interested candidates should send their applications on plain paper giving Name; Date of Birth; Father's Name; Present/Permanent Address; Statement of Academic Qualifications (listing the examination passed, examining body, year of passing and marks obtained in each case) and Statement of Research Experience, if any, along with a set of their publications and copies of testimonials (including marksheet in respect of the qualifying examination) so as to reach the undersigned by hand or by Registered post A/D on or before **January 24, 1978**.

5.2 The application should indicate clearly the assignment (JRF or SRF or Research Associate) and the Project Number for which the application is made.

6. Single Second-Class railway-fare by the shortest route from the place of residence to ISM and back shall be paid to candidates called for attending the interview.

S.K. BORDIA
REGISTRAR

Classified Advertisements

(Continued from page 699)

2. Lecturers in Law.....Two
Pay-scale: Rs. 700-40-1100-50-1600
Qualifications

(a) A Doctor's degree or research work of an equally high standard.

(b) Consistently good academic record with 1st or high 2nd class (B in the seven point scale) Master's degree in the subject or an equivalent degree of a foreign University.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing consistently good academic record (weightage being given to M. Phil. or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical

experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Explanation

1. Candidates for being eligible for recruitment to the posts of Lecturers must have a 1st or high second class (B in the seven point scale) at the Master's level and for determining consistently good record, average of 50-55% may be expected at the two examinations prior to the Master's examination.

The following two examples would illustrate the above:

(i) A candidate who has obtained 52% marks at the Higher Secondary/Pre-University/Intermediate and 58% at the Degree level would have an average of 55% and as such could be considered.

(ii) A candidate who has obtained

60% marks at Higher Secondary/Pre-University/Intermediate and 50% at the Degree level would have an average of 55% and as such could be considered.

Candidates for the post of Reader who do not possess a Doctoral Degree are required to submit 10 typed/cyclostyled copies of brief resume of their research/published work.

Persons already in service should route their applications through proper channel. Incomplete forms and those received after the due date will not be entertained. Serving employees may, however, send their applications on the prescribed proforma direct to the University. They may route another copy through their departments. They will be allowed to present themselves for interview only on the production of a 'No Objection Certificate' from their employers. Canvassing in any form will disqualify a candidate.

Application forms can be obtained from the Office of the Finance & Development Officer, Panjab University, Chandigarh, by making a written request accompanied with self-addressed envelope of 23 x 10 cms.

A list of Doctoral Theses Accepted by Indian Universities

SOCIAL SCIENCE

Political Science

1. Basu, Sajal Kumar. Politics of violence: Studies with reference to West Bengal. University of Calcutta.

Economics

1. Mahesh Chander. Railway rates and fares in India 1849-1922. An historical cum analytical study. University of Delhi.
2. Muhammad Masum. Unemployment and under-employment in agriculture: A case study of Bangladesh. University of Delhi.

Education

1. Umamahesan, P. Practices and prospects of physical education in the colleges under the University of Kerala. University of Kerala.

Commerce

1. Chawla, Roshan Lal. Export promotion as a development strategy for Brazil: A case study in the export policy of Brazil during 1964-74. Jawaharlal Nehru University.
2. Goyale, Rup Narain. Depreciation policies and practices in Indian industries. University of Delhi.
3. Joshi, Harish Chandra. Problems and prospects of road transport development in the hills of U.P. with special reference to Kumaun Region. Kumaun University.
4. Kothari, Shobhag Mal. Madhya Pradesh ke Madhya Bharat kshetr mein sahakari adhikoshan evam krishi vit. Vikram University.
5. Kulkarni, Balkrishna Dattatraya. Functioning of the regulated markets in Sholapur District with special reference to groundnut, tur and bajra. Shivaji University.

HUMANITIES

Literature

English

1. Chakrabarti, Syamsundar. The common man in the poetry of Wordsworth and the fundamental difference between Wordsworth and other romantic poets in their treatment of the common man. University of Calcutta.
2. Gautam, Asharfi Lal. The art of Tennessee Williams: Themes and technique. Awadesh Pratap Singh University.
3. Subhash Chander. Achievement of Christopher Fry as a writer of poetic drama. University of Delhi.

Sanskrit

1. Joshi, J.C. A critical study of Navasahasankacharitam of Padmagupta Parimala. Saurashtra University.

2. Sushma Kumari. Rajashekhara—as a poet and a critic. University of Delhi.

3. Udgir, Yeshwant. Dharmshastra ko Raja Bhoj kee den ka samalochanatmak adhyayan. Vikram University.

Hindi

1. Golwelkar, Vidya. Hindi tatha Marathi ke samajik natakon ka tulnatmak adhyayan. Ranchi University.
2. Goyal, Bimla. Swatantrayottar Hindi kavita mein akrosh ka swar. University of Delhi.
3. Machi Reddy, T. Imagery in modern Hindi and Telugu poetry. Sri Venkateswara University.
4. Oberoi, Tarkesh. Premchandottar upanyason mein charitrik pratiman. Awadhesh Pratap Singh University.
5. Rai, Ram Khelawan. Kabir kavya mein prayukt vishisht shabdavali ka anusheelan. Awadhesh Pratap Singh University.
6. Verma, Hazari Lal. Malwi bhakti kavya mein nirgun sampradaya. Vikram University.
7. Shrotriya, Prabhakar. Prampara evam adhunikta ke sandarbh mein nayee kavita ka anusheelan. D. Litt. Vikram University.
8. Venkatarathnam, Y. Swatantryottar Hindi—Telugu kavya prevrittian. Sri Venkateswara University.

Persian

1. Maimoona Khanam. Marthiya in Persian: Its origin and development. Nagpur University.

Arabic

1. Faridi, Nisar Ahmed. A critical study of historical literature in Arabic from the rise of Islam upto the end of Umayyad Caliphate (132 A.H.) University of Delhi.

Malayalam

1. Sukumara Pillai, K. Grammatical treatises in Malayalam: A critical study. University of Kerala.

Kannada

1. Gunjal, Shivapurtrappa Rayappa. Rev. Channappa Uttangi: His life and works. Karnatak University.
2. Rajur, V.B. Kannada sangatya sahitya. Karnatak University.

Telugu

1. Chandrasekhar Reddy, R. A critical study of Prabhavathi Pradyumamu. Sri Venkateswara University.
2. Sarvothaman, K. Dravidian prosody: A comparative study. Sri Venkateswara University.

History

1. Ghosh, Ratnabali. Aspects of Seventeenth Century Rajasthani paintings: A study of its cultural sources. University of Calcutta.

PANJAB UNIVERSITY CHANDIGARH

Advertisement No. 38/77

Applications are invited for the Post of Reader in Library Science in the pay-scale of Rs. 1200-50-1300-60-1900 so as to reach the Registrar, Panjab University, Chandigarh by 31st January, 1978 alongwith postal orders of Rs. 7.50.

Qualifications

Essential

(1) Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in:

- (i) research or
- (ii) innovation in teaching methods;

or

(iii) production of teaching materials.

(2) About five years' experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding research work.

Persons already in service should route their applications through proper channel. Incomplete forms and those received after the due date will not be entertained. Serving employees may however, send their applications on the prescribed proforma direct to the University. They may route another copy through their Departments. They will be allowed to present themselves for inter-

view only on the production of a 'No Objection Certificate' from their employers. Canvassing in any form will disqualify a candidate.

Application forms can be obtained from the office of the Finance & Development Officer, Panjab University Chandigarh, by making a written request accompanied with self-addressed stamped envelope of 23 × 10 cms.

LUCKNOW UNIVERSITY

Corrigendum

In advertisement No. 16/1977 the designation of the post at Serial No. 2 is "One temporary Reader in Pathology (Cytology)" and not "one temporary Reader in Pathology (Parasitology)."

A list of select articles culled from Periodicals received in AIU Library during December, 1977.

EDUCATIONAL PHILOSOPHY

- Bailey, Stephen K. "Needed changes in liberal education". *Educational Record* 58 (3); Summer 77: 250-8.
- Gibson, Rex. "Bernstein's classification and framing: A critique". *Higher Education Review* 9 (2); Summer 77: 23-45.
- Madtha, William. "Conscientization: The aim of university education". *Journal of Higher Education (Delhi)* 2 (3); Spring 77: 309-15.

EDUCATIONAL PSYCHOLOGY

- Child, Dennis and Croucher, Audrey. "Divergent thinking and ability: Is there a threshold". *Educational Studies* 3 (2); June 77: 101-10.
- Moen, Ross and Doyle, Kenneth O. "Construction and development of the academic motivations inventory (AMI)". *Educational and Psychological Measurement* 37 (2); Summer 77: 509-12.
- Spitzer, Dean R. "Motivational Design: Toward a new educational technology?". *British Journal of Educational Technology* 8 (1); Jan 77: 63-9.

EDUCATIONAL SOCIOLOGY

- John, George. "Student power to what end?". *Youth Times* 6 (17); 11-24 Nov 77: 16-17.
- Lowenthal, Richard. "On the disaffection of western intellectuals: Between cultural decay and social renewal". *Encounter* 49 (1); July 77: 6-13.
- Macdonald, K.M. "University selection and educational culture". *Higher Education Review* 9 (2); Summer 77: 58-68.

EDUCATIONAL PLANNING

- Barnabas, Manorama. "Undergraduate education under the semester system". *Journal of Higher Education (Delhi)* 2 (3); Spring 77: 329-40.
- Spaulding, Seth. "Educational planning: Who does what to whom and with what effect?". *Comparative Education* 13 (1); Mar 77: 55-67.

EDUCATIONAL ADMINISTRATION

- Bhattacharya, Swapan K. and Pal, Manabendra Nath. "Management information systems in university administration". *Journal of Higher Education (Delhi)* 2 (2); Autumn 76: 213-21.
- McGill, William J. "University and the State". *Educational Record* 58 (2); Spring 77: 132-45.

PURPOSE AND function of the International Bureau of Education". *Teachers of the World* (1); 1977: 6-8.

CURRICULUM

- Fraser, Stewart E. "Family planning and sex education: The Chinese approach". *Comparative Education* 13 (1); Mar 77: 15-28.
- Harris, Alan. "Impossibility of a core curriculum". *Oxford Review of Education* 3 (2); 1977: 171-80.

TEACHING

- Deshmukh, M. N. "Teachability of creativity". *Journal of Indian Education* 3 (2); July 77: 45-50.
- Santinelli, Patricia. "Having to lecture causes most self doubt". *Times Higher Education Supplement* (311); 21 Oct 77: 6.
- Subbarayan, Peri. "Does M. Phil. facilitate teaching?". *Journal of Higher Education (Delhi)* 2 (3); Spring 77: 425-8.

EVALUATION

- Bhatt, Anil and Shukul, H.C. "Evaluation of teachers by students". *Journal of Higher Education (Delhi)* 2 (3); Spring 77: 415-9.

- Hakstian, A. Ralph and Bennet, Richard W. "Validity studies using the Comprehensive Ability Battery (CAB): 1. Academic achievement criteria". *Educational and Psychological Measurement* 37 (2); Summer 77: 425-37.
- Jagdale, M.H. "Examination reforms: A plan for action". *University News* 15 (21); 1 Nov 77: 577-9.
- Melton, Reginald F. "Course evaluation at the Open University: A case study". *British Journal of Educational Technology* 8 (2); May 77: 97-103.
- Newbould, C.A. and Massey, A.J. "Computerized item banking system". *British Journal of Educational Technology* 8 (2); May 77: 114-23.
- Wright, Benjamin D. "Solving measurement problems with the Rasch Model". *Journal of Educational Measurement* 14 (2); Summer 77: 97-116.

EDUCATIONAL RESEARCH

- Baumgart, Neil L. "Designing research on teaching styles". *Educational Studies* (3)2; June 77: 117-27.
- Blyth, W.A.L. Integrated study and educational research: Some observations on the British scene". *British Journal of Educational Studies* 25 (2); June 77: 109-23.

EDUCATIONAL TECHNOLOGY

- Marchant, H. "Increasing the effectiveness of educational films: A selected review of research". *British Journal of Educational Technology* 8 (2); May 77: 89-96.
- Weltner, Klaus. "Development of study techniques by integrated master programmes". *British Journal of Educational Technology* 8 (1); Jan 77: 34-44.

ECONOMICS OF EDUCATION

- Agrawal, Bina. "Exploitative utilisation of educated women power". *Journal of Higher Education (Delhi)* 2 (2); Autumn 76: 185-95.
- "Positive investment for all concerned". *Times Higher Education Supplement* (314); 11 Nov 77: 5.

ADULT EDUCATION

- Gupta, M.L. "Equality of opportunity in education: A case for correspondence education". *Education Quarterly* 29 (2); July 77: 9-12.

PROFESSIONAL EDUCATION

- Chaturvedi, Vipula and Chaturvedi, M.C. "Higher technical education: Patterns trends and implications for developing countries". *Journal of Higher Education (Delhi)* 2 (3); Spring 77: 377-86.
- Dubey, V.K. and C. Prasad. "Teaching, research and extension in Indian agricultural universities". *Journal of Higher Education (Delhi)* 2 (3); Spring 77: 393-400.
- Rangaswami, G. "Self improvement of agricultural universities". *Journal of Higher Education (Delhi)* 2 (3); Spring 77: 387-91.

COMPARATIVE EDUCATION AND COUNTRY STUDIES

- Abraham, A.S. "UGC bids for major extension of powers". *Times Higher Education Supplement* (314); 11 Nov 77: 6.
- Halls, W.D. "Comparative studies in education 1964-77: A personal view". *Comparative Education* 13 (2); June 77: 81-6.
- Joshi, K.L. "U.G.C. and the review committee". *University News* 15 (22); 16 Nov 77: 603-5.
- King, Edmund. "Comparative studies: An evolving commitment a fresh realism". *Comparative Education* 13 (2); June 77: 101-8.
- Parkyn, G.W. "Comparative education research and development education". *Comparative Education* 13 (2); June 77: 87-93.

**INDIAN INSTITUTE OF
TECHNOLOGY BOMBAY**
P.O. I.I.T., POWAI.
BOMBAY-400076

Advertisement No. 908/77

Applications are invited for the posts of Assistant Professor in the Industrial Design Centre, I.I.T., Bombay, in the prescribed form obtainable from the Registrar, I.I.T., Bombay, P.O. I.I.T., Powai, Bombay-400 076, on request accompanied by self-addressed envelope (25 cm×10 cm). Indian candidates from abroad may apply on plain paper. Candidates employed in Government/Semt-Government Organization or Educational Institution must apply through proper channel. Last date for receipt of completed application is **31-1-1978**.

1. Assistant Professor: Industrial Design Centre.

2. Scale of Pay: Rs. 1200-50-1300-60-1900.

3. Qualification & Experience

Good degree in Engineering/Architecture/Applied Art and Post-graduate education in Product Design/Industrial Design.

Relaxable in cases of candidates with proven ability and long experience in the relevant field.

At least five years' experience of teaching/industrial nature in Product Design/Industrial Design.

The posts are permanent and carry allowances such as D.A., C.C.A., H.R.A. as per rules of the Institute which at present correspond to those admissible to Central Government employees stationed at Bombay.

* * *

BANARAS HINDU UNIVERSITY

Advertisement No. 17/1977-78

Applications are invited for the under-mentioned posts. Benefit of Provident Fund/Pension, Dearness Allowance, House Rent Allowance & City Compensatory Allowance are admissible according to University Rules. Retirement age of University employees is 60 years. Appointment on permanent posts will be made on two years probation and on other posts for the duration of the posts. Higher starting salary within the grade is admissible to specially qualified and experienced candidates.

Applications will be entertained on the prescribed form obtainable from the office of the Registrar, Selection Committee Section, Banaras Hindu University, Varanasi-221005 on sending Re. 0.40 paise stamped self-addressed envelope 23 cm×10 cm size, and they should be submitted to the above address along with attested copies of all certificates and with a Bank Draft or Crossed Indian Postal Order for Rs. 7.50 for post No. 1 to 6 and for Re. 1/- for post No. 7 & 8 in favour of the Registrar, Banaras Hindu University towards

application fee. Candidates coming for interview for post No. 1 to 6 alone will be entitled for actual Railway fare by the New Second Class from the present residence both ways by the shortest route. No other expenses are admissible.

Incomplete applications in any respect will not be entertained for consideration.

Last date for receipt of applications is **January 16, 1978**.

1. Documentation Officer

(Centre for study of Nepal under Area Study Programme—Dept. of Political Science) (Till 1978-79 but likely to continue).

Grade: Rs. 700-40-900-EB-40-1100-50-1300.

Qualifications Essential: (1) A first or second class Master's Degree in Political Science/ History/ Economics/ Sociology/ Psychology; (2) At least a second class in B.Lib. Sc. or one year diploma in Lib. Sc. (3) At least two years experience of working in a well-established library, preferably of documentation work. **Desirable:** (1) A good knowledge of Nepali.

2. Scientific Officer

(Deptt. of Metallurgical Engg., I.T.) (Under V Plan likely to continue).

Grade: Rs. 700-40-900-EB-40-1100-50-1300.

Qualifications Essential (1) Master's Degree in Physical Sciences or Bachelor's Degree in Technology with 2 years work experience. **OR**

Bachelor's Degree in Physical Sciences with 5 years work experience **OR** Engineering Diploma with 10 years work experience. **Desirable:** (1) Work experience in the maintenance and operation of sophisticated equipments in one or more of the following laboratories:

(i) Electronic instrumentation; (ii) Electron microscopy; (iii) Scanning Electron microscopy; (iv) X-ray equipment; (v) Modern mechanical testing; (vi) Modern Analytical facilities.

Note:

Qualifications may be relaxed in case of highly qualified and/or highly experienced candidates.

3. Deputy Keeper

(Bharat Kala Bhawan) (Under V Plan, likely to continue)

Grade: Rs. 700-40-900-EB-40-1100-50-1300.

Qualifications Essential: (1) At least second class M.A. in Indian Art & Architecture/Ancient Indian History Culture and Archaeology/Sanskrit or an equivalent degree from a foreign University with special papers on Indian Arts. (2) At least 3 years experience of working in a reputed Museum. **Desirable:** (1) Diploma in Museology, (2) Research and publication experience. (3) Specialisation in more than one subject related to Indian Art.

4. Assistant Librarian

(Bharat Kala Bhawan) (Under V Plan likely to continue).

Grade: Rs. 700-40-900-EB-40-1100-50-1300.

Qualifications Essential: (1) First or Second Class M.A./M.Com./M.Sc. with B.Lib. Sc./Diploma in Lib. Sc. or First or Second Class M.Lib.Sc. with B.A./B.Com./B.Sc. in II class.

Desirable: (1) Postgraduate degree preferably in A.I.H.C. and Arch./Art and Architecture. (2) Working experience in an Art Museum Library. (3) Knowledge of documentation work. (4) 3 years experience of working in a University Library.

5. Research Officer

(Deptt. of Physiology, Inst. of Med. Scs.)

Grade: Rs. 700-40-900-EB-40-1100-50-1300.

Qualifications Essential: (1) M.Sc. (Physiology/Physics with Bio-physics special paper). (2) 3 years Research experience.

Desirable: (1) Ph.D./M.D. degree in the subject. (2) Experience of handling Electronic Instruments.

Note: The post does not carry Non-practising Allowance.

6. Speech Therapist

(Deptt. of Otolaryngology) (I.M.S.)

Grade: Rs. 700-40-900-EB-40-1100-50-1300.

Qualifications Essential: (1) M.B.B.S. with D.L.O./B.Sc. (Speech & Hearing) with M.Sc. (Speech & Hearing with specialisation in Speech Pathology). (2) Ability to write and speak Hindi fluently. (3) At least one year experience of managing patients with acquired speech defects and voice problems following major Head and Neck Surgery and Otoneurological disorders in E.N.T. Deptt. of a teaching hospital.

7. Orthoptist

(Deptt. of Ophthalmology).

Grade: Rs. 550-25-750-EB-30-900.

Qualifications Essential: (1) Intermediate in Science with Diploma in Orthoptist from recognised School of Ophthalmology.

Desirable: (1) Minimum 2 years experience as a whole time Orthoptist in a teaching institution or in leading Eye Hospital.

8. Assistant Editor

(Vishwa Panchang Unit, Faculty of O.L. & T.)

Grade: Rs. 425-15-500-EB-15-560-20-700.

Qualifications Essential: (1) Jyotish Shastra Acharya or Acharya in 'Ganit' and 'Phalit' in first or high second division. (2) Not less than 3 years of experience of assistant in the preparation/editing of a recognised Panchang. (3) Good knowledge of Sanskrit at least of Shastri level. **Desirable:** (1) Acharya in Dharmaghastra. (2) Published articles on Jyotish.

University lews

A CHRONICLE OF HIGHER EDUCATION & RESEARCH MAY 1, 1978 80 PAISE



Lakshmi Narain Lal (third from left), former Lecturer of Delhi University, among others who received the Sangeet Natak Academy awards from the President, Mr. N. Sanjiva Reddy, in New Delhi.

UNIVERSITY OF RAJASTHAN JAIPUR

Advertisement No. 6/78

Applications are invited (through proper channel in case of those already in employment) so as to reach this office on or before the 25th May, 1978 in the prescribed form available from the Registrar's office on prepayment of Rs 4 (Rs 3 extra in case required by post) for the undermentioned posts in the various Departments. The selected candidates will however be seconded in the University Institute of Correspondence Studies & Continuing Education.

1. Readers

(In the grade of Rs 1200-50-1300-60-1900) Political Science-1, History & Indian Culture-1, Accountancy & Business Statistics-1, Business Administration-1, Economic Administration and Financial Management-1, Continuing Education-1 and Human Relations & Management Skills-1.

2. Lecturers

(In the grade of Rs 700-40-1100-50-1600) Political Science-5, History-6, History of Indian Civilisation and Culture-1, Economics-3, Public Administration-3, Sociology-3, Hindi-5, Accountancy & Business Statistics-6, Business Administration-5, Economic Administration & Financial Management-4, English-2, Sanskrit-1, Mathematics-1, Statistics-1, Library Science-3, Journalism-2, Home Science (Nutrition & Dietetics)-2, Indian Languages (Tamil)-1, Continuing Education-1 and Human Relations & Management Skills-1.

Details of qualifications etc. may be obtained along with the prescribed application form or separately as the candidate may desire. Benefits of Provident Fund, D.A. and other allowances will be admissible as per rules of the university. Candidates will be called for interview at their own expenses. The university reserves the right to alter the number of posts.

L.P. Vaish
REGISTRAR

* * *

INDIAN INSTITUTE OF TECHNOLOGY, KANPUR KANPUR-208016

Advertisement No. 9/78

Applications are invited for various faculty positions in the Department of Civil Engineering in the following pay scales.

Professor: Rs. 1500-60-1800-100-2000-125/2-2500

Assistant Professor: Rs. 1200-50-1300-60-1900

Lecturer: Rs. 700-40-1100-50-1600

Number of positions: Eight

The Department is seeking individuals with ability and aptitude for teaching in Undergraduate/Post-graduate pro-

grammes, research and development in any of the areas of specialisation listed below:

(a) Engineering Geology

Application of Geosciences in Civil Engineering with experience in areas such as Computer Applications in Earth Sciences; Modern Techniques in Petrographic and Natural Water Analysis; Engineering Geophysics.

(b) Environmental Engineering

Air Pollution Control, Biological Aspects of Environmental Pollution; Water and waste-water Treatment, Solid waste Management; Rural Sanitation and Public Health.

(c) Hydraulics and Water Resources Engineering

Fluid Mechanics and Hydraulic Engineering; Groundwater Hydrology; Surface Water Hydrology, Water Resources System Planning.

(d) Remote Sensing, Photointerpretation, Surveying and Photogrammetry.

(e) Soil Mechanics and Foundation Engineering

Analysis of Deep Foundations, Soil-Structure Interaction, Underground Structures, Probabilistic Design of Structures and Foundations.

(f) Structural Engineering

Design of Concrete and Steel Structures, Analysis and Design of Offshore Structures.

(g) Transportation and Urban Systems Engineering.

Candidates having special aptitude and experience in the areas of Civil Engineering Materials and Construction Planning and Management will be preferred.

Qualifications for various positions Professor

Doctorate degree with good academic record and atleast eight years of professional experience of good quality outside the work for the degree.

OR

M. Tech. with good academic record and at least fifteen years of industrial experience with brilliant record outside the work for the degree.

The candidates must have demonstrated ability of independence in teaching and research with significant contribution in the area of specialisation evinced by the adequate number of research publications of good quality in journals of repute and/or developmental project reports of equivalent merit based on the work outside the candidate's own thesis.

Assistant Professor

Doctorate degree with good academic record and atleast three years of professional experience outside the work for degree.

OR

M. Tech. with good academic record and atleast seven years of industrial experience with good record outside the work for degree.

The candidates must have potential for independence in teaching and independent research work as demonstrated by adequate number of publications of good quality in journals of repute outside the candidate's own thesis, or equivalent development work done.

Lecturer

Doctorate degree with a good academic record and adequate research experience resulting in research papers of good quality.

OR

M. Tech. with good academic record and atleast three years of teaching research/industrial experience with good record outside the work done for degree.

Basic degree in Civil Engineering required for all the posts except in the areas of Engineering Geology and Remote Sensing.

Posts are permanent and carry retirement benefits in the shape of CPF Scheme or CPF-cum-Gratuity Scheme or GPF-cum-Gratuity-cum-Pension Scheme as may be opted according to rules. The age of retirement is 60 years. During the first year, the appointment will be on probation. Besides pay, posts carry allowances according to the Institute rules, which at present correspond to those admissible to the Central Government employees stationed at Kanpur. Higher initial pay is admissible to exceptionally qualified and deserving candidates. Candidates called for interview will be paid second class railway fare from the place of duty to Kanpur and back by the shortest route.

In the category of Lecturer, one post is reserved for SC/ST candidate. In the event of non-availability of suitable SC/ST candidate, the reserved post would be treated as dereserved.

Applications from within India must be made on prescribed form obtainable free of charge from the Registrar of the Institute by sending a self-addressed unstamped envelope of 25 cm x 10 cm size. Applications should be accompanied by a postal order for Rs 7.50 (1.87 for SC/ST candidates).

Applicants who are employed in a Government/Semi-Government organisations or Institutions should send their applications through proper channel, else they will be required to produce a 'No Objection' certificate from their employers at the time of interview.

Applicants from abroad may apply on plain paper enclosing a complete bio-data and names of three referees from whom reference letters may be obtained.

Those who have already applied in response to Advertisement No. 24/77 need not apply again.

Applications should reach the Registrar, Indian Institute of Technology, IIT Post Office, Kanpur-208016 on or before May 15, 1978.

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Hony. Editor : ANJNI KUMAR

Adult Education—A Task for College Teachers

K. S. Karhadkar*

For a vast country like India where seventy per cent people are illiterate and where many young men and women are compelled to leave their schooling to get early employment Adult Education and Continuing Education is a dire necessity. Adult education in its present form began in the middle of the 19th century. At the beginning adult education was only "remedial" that is it was meant to make good the lack of formal schooling which the children of more fortunate parents had received. However as the time passed the concept of Adult education was extended and it came to include the satisfaction of the various needs of adults in the way of economic efficiency, more knowledge and a richer cultural life. India has the biggest number of illiterate people in the world. It is clear that higher education in this country will be ineffective if it exists in a surrounding of so much illiteracy. And hence it is the duty of college teachers to help in removing illiteracy which slows down the developmental process of our country.

We are living in a period of what has been called the explosion of knowledge. Our society is still in agricultural stage of development and still traditional in character. The exploration of reality, the discovery of new truth, research into secrets of nature and the development of technology are the things which are to be introduced to our society around us. This can be done very effectively by college teachers as they are attached to the institutions of higher education. These institutions can spread knowledge amongst the people around by means of extension of work by something like a missionary activity among the people. College teachers can encourage and persuade their students to participate in the economic activities in their neighbourhood and in the process it should become channels of communication of new knowledge to the people amongst whom they live and work. In this way a college set in a suburban or rural community would there be much more than a teaching institution. College teachers can organise students bodies for the purpose of adult education. Batches of students can be trained for literacy work, village cleaning, first-aid, to assist rural libraries. Teaching of health and hygiene, correspondence courses, exhibitions, lectures, and night-classes can be organised by college teaching community and make adult education more effective. Teachers can attend religious fairs bazar-days in villages and organise various camps for the sake of adult-education at large.

It is now recognised fact that since a very large part of non-literate population consists of persons
(Continued on page 920)

* Ahmednagar College, Ahmednagar.

Policy Frame for the Development of Higher Education

R. N. Chaturvedi*

The Policy Frame presented at the Rajkot Conference on the one hand epitomises the whole thinking about education from primary to highest levels including research and on the other hand outlines the policy proposed for adoption and implementation for a period of 10-15 years. Such an endeavour is fraught with many pitfalls as the very task of striking a balance among various approaches, is not only arduous but also at times tends to be impossible. When this is borne in mind, a more correct and constructive appraisal is possible.

The Policy Frame presents an integrated picture of the whole scheme of education from beginning to end. Nearly half of the document covers besides a short statement of general objective, achievements and failures of the existing educational system, glaring weak spots therein alongwith the time of attack to remedy them, and the proposal regarding the reconstruction of the primary and secondary education. In the III section the proposed scheme for higher education is elaborated. All these need to be examined closely; but a perfectly objective appraisal demands that the following words of Gandhiji be kept ever fresh in memory while going through a document prepared with great pains to meet, as far as possible, the requirements of varying nature of various types with scarce resources. "Put tons of Gita study in one scale and an ounce of its practice in another, the latter will far outweigh the former," wrote Gandhiji when he was asked to send his message for a special Number on the Gita. Practicability in a given setting, is the kernel of all merit of any scheme.

When one goes through the lines and also in between the lines of the Policy Frame, one cannot help being impressed by the comprehensive list of the objectives—national, social and individual each with its numerous aspects. Remedies to various problems have been proposed but there is one aspect, which perhaps has not been touched as explicitly as it deserved and it is the appetite for learning more and more. Obliquely, however, this aspect has also come in, but in the context of remedial measures, one of which pertains to the de-linking of degrees with the aspiration to take a competitive examination for services of the highest cadre including that of I.A.S. and the other to selective admissions in colleges and universities. The whole logic behind these, is that most of the students who go in for higher education, do so not out of thirst for knowledge but to get a passport for one service or the other or even to be eligible for competitive examinations for various government jobs. The moment degree-certificate becomes like a demonetised currency note in matter of services, its charm will go as far as its value as an eligibility-ticket is concerned the mounting rush for admissions in colleges will come down.

The idea of setting up 'autonomous colleges' has been in the air for some years in this part of the country. It is true that there are some colleges of this

type in Madurai and they are working well. In fact they are a special feature of the American life pattern. The Policy Frame, while proposing to establish 500 colleges of this type by the end of the plan period also contains the provision that autonomous character of any college will perpetually remain dependent on its performance. If its performance falls below a certain level it, may lose to be autonomous. Likewise a new college may acquire this status if its performance is adjudged to be of a sufficiently high degree.

One has to be very cautious in being enthusiastic about this scheme. There are elements of both trust and distrust mixed up in it. Even in a comprehensive planned system, there is plenty of scope for autonomy; but that autonomy should be universal and alike. There does not seem to be any reason for it to be selective. When grades and conditions of service are alike for all teachers, what is a must, is a sense of duty and responsibility, among them commensurate with the task entrusted to them. The principle of selection in this matter of autonomy presumes at least partly that an appreciable number of existing teachers are lacking in it and that they have to be tolerated for reasons that are beyond control. In such a situation the concept of autonomy as formulated appears more an apology than a measure considered necessary to further the cause of education. Autonomy has to be evolved in the Indian conditions rather than imported and gifted. The scheme of 'autonomous colleges' would perhaps acquire greater relevance and usefulness, if autonomy is classified into certain well-defined grades and each college starts in the first grade of autonomy and moves on to successive higher grades, depending on its performance, which is a function of several factors e.g. quality of the teachers on the staff, calibre of the head of the institution, the aptitude and character of the students in general and the political and social environment of the locality. If all these factors are favourable autonomy will yield very good results. If one or more of these factors are unfavourable, autonomy will create more chaos than promote healthy growth. If and when the scheme of de-linking the university degrees from services and competitive examinations is implemented, a much more favourable atmosphere for the success of 'autonomous colleges' can be expected.

When one ponders over the policy chalked out as regards the contents of knowledge that are to be acquired at different levels—primary, secondary and higher—one is struck by the fact that the trend of expanding and extending the contents and multiplication of subjects especially up to the secondary level, has come to stay. There is no doubt that the content aspect is important, but much more important than that is the development of the capacity to think logically and in a coherent manner. This is likely to be of much greater utility to the student in after life. And this function can be best served if the content por-

(Continued on next page)

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Goals of Social Progress and Development

In most countries of the Third World experience has shown that education has been a minor programme which stands aside of national development. Planning is largely designed by specialists arching themselves to reach the models from the advanced countries.

Today, as of yesterday, planning starts off with village and block plan; but with a prime emphasis on the basic human needs approach in the Gandhian tradition. Basic needs of a people comprise personal consumer goods (the necessities of life), social access to services (like primary and non-formal education, medical care, environmental sanitation, urban and rural community facilities, transport and communication) the physical, human and technological infrastructures and productive employment, all of which become operative through the participation of the people in decision-making, evaluating progress and formulating strategy for development through fulfilling projects of change.

If we realise that the people are central to any programme of change, we should concede that they must have more and intelligent control of their own affairs in an action for development. This demands a suitable economic structure to keep the people at all levels within the economic mainstream on the strength of a supporting social structure which has to be evolved by means of effective participation of the people; which amounts to social organisation of economic activities initiated and sustained on a development administration framework, conducive to the material and spiritual welfare of man in society. Thus meeting the basic human needs and self-reliance become the two articulated terms in national development planning.

The Malcolm Adiseshiah Committee on the pattern of higher secondary education has come out with a solution to the major crisis in Indian education—a system of hitherto desocialised education—by suggesting two types of education at the plus two stage of the school course—general education and vocational education. What is new as reported in the committee's recommendations is not the bifurcation of education at the higher secondary levels, but the attempt to present the social reality of India in terms of a general education, socially useful and productive with an accent inter-alia, on a near-version of the Gandhian concept of education, rural development, as well as of a vocational education, aimed at education for self-employment.

What this amounts to is the analysis of education as being more functional than formal, more developmental than merely didactic. Education in this sense becomes more central to national life and to human resource development. If education does not recognise this—be it formal or non-formal—educational programmes may at best look dwarfed, be formalistic and peripheral.

For, development is for the people. Overcoming the obstacles to development by a structural—functional process, the raising of their economic standards

and their consequential development rest on an educational planning that should aim at realising that economic and social development is a corporate act, with a focus on a socially and morally accepted level of living in order to ensure social justice and equity, a sense of responsibility for the community, willingness and ability to take decisions for the common good with its consequential risk and readiness to admit mistakes.

The objectives of such an education are to make people self-reliant, self-respectful, critically conscious and economically and socially efficacious. Any literacy programme—formal or non-formal—has therefore to be viewed not as sequel to development, but as a technique of development centred on a desired social transformation. It is in this context that education becomes a strategy, generic and particularistic in relation to development. (Courtesy : *The Hindu*)

(Continued from previous page)

tion, is kept very moderate. It does not much matter if during the course of student life the child knows only a few what's, but he will really be a loser if he does not know the why's and how's of them. The habit formed of trying to know the why's and how's precisely and correctly is a real gain. The policy framers could not have closed their eyes towards this aspect; but considerations more weighty than academic seem to have prevailed in this respect. This aspect deserves to be given due weight at the time of the preparation of syllabus.

We will do well to remember that a university or college or school is a miniature world. In an atmosphere charged with indiscipline, no educational institution can aspire to be free from onslaughts of disciplinary winds raging in its surroundings. Without the positive support of the government and the negative support of the political parties in having nothing to do with student community and educational institutions, it is improbable the discipline could be restored in schools, colleges & universities. There is clear mention of this necessity in the last page of the report. In an atmosphere of indiscipline even the best scheme will fail to yield any good results. A sense of commitment in the teachers, political parties and the government can be expected to serve the cause of education.

The problem of raising the standard is a complicated one. Performance of a student is not solely the function of the standard of teaching. It is only one factor. What has actually happened is not so much the falling of the standards of achievement as such but the falling of the standards of evaluation under mounting pressures of all sorts. Selective admissions and delinking of university certificates from service-eligibility are expected to go a long way in the fulfilment of this objective.

The Policy Frame is comprehensive and no aspect has been left untouched in the integrated portrait of what ought to be achieved and how. Very much will depend, however, on how it is implemented at various stages. Whether the conditions necessary for its success, will be fulfilled in any appreciable degree, is something about which nothing definite can be said. Let us start with confidence and enthusiasm and face facts as they emerge. □

Rural Universities for India

The students and the youth of our country in general are every bit as good as students and youth in other parts of the world. As a class, they are generally full of moral idealism and amenable to reason, argument and persuasion. But they are apparently bewildered by the behaviour of some of our politicians, high and low, and their meandering, time-serving, pocket-lining political antics; and some students seem to be persuaded that following the examples of these politicians is the short cut to success.

What are the reasons for the student unrest in our country? They are: the Chancellor is ignorant of the purpose and end of a university; the State Government unduly interferes in making appointments to the university faculty without

plaints and grievances, are quite true of some university or other at some time or other. No one can generalise.

But in defence of the universities they are no more than a sample of the country. While campuses may be treated as special samples, they reflect in a material sense the general poverty, low standards of living and low levels of consumption of the people in the nation as a whole. The universities, therefore, cannot suddenly become clean, neat, tidy pockets of modern buildings and well-appointed classrooms with all upto-date amenities. Our national backwardness and general low levels of performance have been reflected in our universities particularly in recent years, when a significant segment of our student

sake, should not indulge in any of these acts of indiscipline, no matter what the provocation. They should resort to constitutional means of organising a small representative committee which would meet the Vice-Chancellor, the State Education Minister and the Chief Minister, and submit their grievances and needs in writing, and then give the authorities a reasonable time to look into them.

The students must realise that in a free India, *Satyagraha* and strikes and academic life do not go together. At the same time the Vice-Chancellor and University administration must be more sensitive and responsive to the normal needs and conveniences of the student community.

Some allegations about teachers and State Governments may be true in certain cases. But while one swallow does not make a summer, the authorities might be well advised to heed the demands for basic and elementary needs of the students, and what is more communicate their concern for the students' welfare to the student community on the subject of what the administration is planning to do and why they are unable to do certain other things. Sometimes the communication gap between the administration and the students has been responsible for an unnecessary strike.

And last is the role of the local politicians who are either communal-minded or have their own vested interests, and who instigate students to make unreasonable demands to create disturbances to gain their (the politicians') own personal ends. In fact, many a students' strike has been traced to the meddling of local politicians in campus affairs—often younger radical politicians who aspire for the leadership of the youth of the country. This usually starts with their asking for the students' help in political campaigns or the politicians setting up their respective political party units on campuses with all their unhealthy implications.

The students, of course, should rightly take a healthy, genuine intellectual interest in the nation's political affairs by reading newspapers and journals and debating

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much reference to merit, thus making a mockery of university autonomy; the Vice-Chancellor is neither a scholar, an intellectual nor an administrator but a mere political appointee; the faculty is not only not the best in the academic sense but is steeped in undesirable local politics, communalism and nepotism; the hostels are overcrowded; the food unpalatable; lack of such elementary recreational facilities as common rooms and games, etc.; the unhealthy interest shown by some political leaders in students' help for promoting their candidature and ideologies; the fees and other levies are high. The unhappy litany could go on.

Are these allegations true or baseless? Some of these com-

population has been drawn from the underprivileged and weaker elements of our country's population.

Thus, granting the environmental and material situation in the universities is far from satisfactory, what should be the duty and role of students in the light of the allegations already enumerated? Granting some of them to be true, should the students go on an indefinite strike, stop attending classes, "gheraoh" the Vice-Chancellor, break the glass windows of the university buildings, set fire to the college buses, stone everything in sight and, in a word, indulge in violence thus causing damage and destruction to public property?

The students, for their own

among themselves the pros and cons of various political ideologies. But the students, so long as they are enrolled as students, should never take an active or direct interest in political campaigns, for this will not only disrupt their studies but bring acrimonious party differences to the classrooms and hostels and vitiate the otherwise calm, healthy atmosphere of the academic community.

The major objective of a student's life must be the pursuit of his studies, to learn all that he can to become proficient in his particular intellectual quest and professional goal, and, equally important, to develop his character and personality.

There is a recent move in certain foreign universities—particularly in the United States of America—to give representation to student leaders in some of the decision-making bodies of the universities. They have what is called a Student Government. But most, if not all, academic authorities India would frown on such a proposition.

Of the three elements that constitute the universities, the students, the faculty and the administration or management—the last two exist primarily to educate and serve the first element. That is, the primary objective of a university is to cater to the needs of the student community—their education, growth and welfare. If the universities can repose a certain amount of confidence in the balanced judgement and responsible behaviour of the students and give them even a token representation in such bodies as the Academic Council, the Senate and the Syndicate, the students, will rise to the occasion and respond in a considerate and thoughtful manner. And student grievances can be met by their own representatives in consultation with other authorities.

Now I would like to briefly examine a subject which has been engaging the attention of our leaders for about three quarters of a century but with only a few successful results. I refer to what may be called the rural problem,

or the real issue behind it, that of the Education of our rural millions.

What is our rural problem? Some eighty percent of our population of about 630 millions live in our more than half a million (560,000) villages. That is, our rural population is about 500 million, considerably larger than the total population of any country in the world today with the exception of Communist China.

And although just being rural need not be a problem, it certainly is a problem, and a major one in our country.

It is a problem because the vast mass of illiterate, ignorant peasants live in huts, hovels and sub-standard dwellings, devoid of any basic sanitary or hygienic necessities, not to speak of any modern amenities like electricity, running water, etc. The environment of the average village is depressing, the streets narrow, crooked and unpaved; and the total picture from the public health point of view is one of filth and squalor.

Whether the peasant works as an independent farmer—his farm is small and uneconomic—or as a landless agricultural labourer, or a sharecropper, his income is meagre and in a majority of cases below the poverty line.

His family size is relatively large; rural birth and death rates and particularly infant mortality rates are high. Rural girls get married in their early teens and women are physically exhausted by the frequency of childbearing before they are thirty years old. Expectation of life at birth for rural men and women is less than 50 years. The demographic profile of our rural population reveals needless loss of life and hence the picture is one of considerable demographic wastage.

Thus, in a word, the rural problem is one of too many births, too many deaths, and the surviving population living a primitive life on a meagre income with a low level of living and consumption, far removed from the main stream of Indian national life.

If this is the problem, what is

the answer? What about a policy of national rural reconstruction—a programme that would rehabilitate the economy of rural agriculture and cottage industries and reconstruct the lives in all aspects of the 500 million villagers?

For nearly a century, political and social leaders, government authorities at local, State and federal levels, publicists and thoughtful students of the Indian rural problem, including many dedicated foreigners, have talked and written and carried out many projects and programmes. Mahatma Gandhi was the most notable of the pioneers who drew attention to village problems. He gave his particular analysis and answers.

We must concede that some ground has been covered and a little progress has been registered as a result of government and voluntary effort in the past three or four decades. Today, in some rural areas there is some kind of school, however unsatisfactory, where there was none before; there is electricity in some villages where even a kerosene hurricane lamp was a rarity; there is, now in some areas, a primary health centre with at least a paramedical worker and a peripatetic visiting physician where in the past the only para "medical worker" available was the *dai*, the ignorant, traditional midwife. We have today in some places some kind of link roads where in the past there were only footpaths. Today some villages have even a post and telegraph office whereas in the past communications were absent and isolation was complete.

This is true of some villages. And yet the picture of most villages today is not what it ought to be in terms of the amenities available in urban areas in India or in terms of the life enjoyed by the rural population in advanced countries.

What then is the means of transforming the face of rural India?

Education (to be defined below) is the major key to the development of rural India. Of course, at the outset I am aware that this sounds simplistic and betrays my bias as an educationist. But

I am convinced that nothing works like real education to bring about a rapid and enduring qualitative change in rural society. Education of rural youth and adults of *both sexes* is the real answer to the miserable plight of our backward rural millions.

But what kind of education? Certainly not the education we have been imparting to the students of our country for the last century and more in our high schools and colleges.

If the key to the rehabilitation of the rural agricultural population and the reconstruction of the village economy is granted to lie in rural education, let us look into certain details of our proposal for a national network of centres for such education.

What shall we call these educational centres? This is a trifle, for after all, what's in a name? But, perhaps, a lot lies in a name. We cannot call them Rural Schools for they would be confused with the regular elementary, middle and high schools that some large villages already have. Nor can we call them Rural Colleges for these may again be taken for the regular present day colleges with their near-useless curriculum. We could call them Rural Institutes and the name may convey what we have in mind. In fact, such institutions are called Rural Institutes in Taiwan, Mexico and elsewhere. But to some educated rural people, and to certain urban students of our rural problem, it may look as if we were short-changing our rural population even in just a name.

So I propose that we call them Rural Universities. This certainly does not mean that we shall duplicate the kind of universities we have all over India and simply place them in rural areas. It will mean, as we shall presently see, that these will be universities *designed for rural India and located in a rural area*, serving a stipulated number of villages around the university.

I shall offer here only a sketchy outline of the role and function of these universities. Once the idea is accepted, we can fill in the various details, depending on regional, occupational, linguistic and cultural needs.

It may be pointed out that the objectives and scope of these proposed rural universities will be quite different from our present Agricultural Universities, which, with a few exceptions, are located in cities and urban areas far removed from the rural milieu.

Who shall be admitted into these rural universities? What shall be the requirements for admission?

All rural young men and women who are agriculturists and artisans shall be admitted irrespective of age, caste, creed or religion. The classes may be designed according to certain broad age groups. Older-age adults can be accommodated in classes held whenever they are free.

There will be no pre-requisites of any kind, academic or otherwise, for admission to these universities beyond a desire to learn. Rural residence and possibly rural-based occupations will be the only criteria.

To begin with, all those who are illiterate and those who have lapsed into illiteracy shall be given a few months or a year's course to make them functionally literate in their mother tongue and the regional language. While in a great majority of cases the students may be required to learn only one Indian language, it may be necessary in some cases to learn two not dissimilar Indian languages. This is in cases where the peasant's mother tongue is not the regional language.

Once the students have learned to read and write the language, the instruction, largely oral but occasionally buttressed by especially prepared manuscript texts, can be undertaken on various relevant subjects.

What shall we teach these students?

As there will be no pre-requisites of any formal education for admission, indeed even a knowledge of the three R's, the courses and content of subjects taught will be quite different from the conventional subjects taught in our present day colleges and universities located largely in the cities. The subjects taught will be directly relevant and oriented to rural needs and problems. In

addition, basic science courses, particularly applied science courses, may be taught.

In addition to adequate functional literacy, rural people need a basic knowledge of health and hygiene, diet and nutrition, improved agricultural methods, and whatever cottage industry they are in already, or would like to be engaged in.

Once he or she is functionally literate, the most important things for the peasant to understand and *practice* are basic, elementary principles of healthful living.

He must be taught in the simplest terms the germ theory of disease. The problem of health and hygiene is probably India's most pressing rural problem. If he can learn to remove and dispose of human wastes and garbage, filter and boil water before drinking it, and treat the fly, the mosquito and the rat as his mortal enemies—as indeed the Chinese peasants have been taught in Communist China in less than a generation—half the battle of India's rural reconstruction will have been won.

Since even basic medical facilities are virtually absent in 80 percent of our villages, the motto for the rural population should be "Prevention is Better than Cure", until the Central and State Governments are able to provide a network of skeletal health services for rural India.

The third problem is one of population control. We have already done a lot of work in rural areas on the need for family planning; and the response and actual practice in terms of sterilizations, for example, have been fairly encouraging in the countryside of the nation as a whole. There are, of course, considerable differentials in targets achieved between one State and another. What is needed is adult population education, which the rural universities will impart, and persuasion supported by a set of incentives. There is no reason why the backward States cannot emulate the overall results achieved by such States as Maharashtra, the Punjab and Tamil Nadu.

The fourth problem is one of balanced nutrition. This means not only *enough calories* for all

the members of the family—including particularly female children who are invariably short-changed, but also sufficient protein. If all the rural wives can be taught the basics of adequate diet for growing children, nursing mothers and working adults—as indeed Punjabi village women apparently have mastered—then the perennial problem of hunger in the countryside can be solved. Nobody believes that rural folk who raise the food and feed the cities should themselves go hungry. But such is the paradox of India at times. The wife must learn to raise vegetables and green leafy plants, and if the family can maintain a cow or she-buffalo the problem of milk supply, not for sale but for family consumption, can be tackled satisfactorily. If the family is non-vegetarian, as indeed a great majority of the 500 million rural population is—some chickens can be raised and the consumption of eggs can take care of the protein gap.

In this connection, there is a great need to evolve a National Meal—cheap, nutritious and balanced—readily available all over India and widely publicised so that wherever people go in India they can ask for and obtain this standard satisfying food. It is high time that India's able nutrition experts tackle this.

All this is, of course, predicated upon the rural family owning a plot of land and having a little capital to own a cow, a plow, etc. As for landless families, some amount of external help is imperative. And the provision of water, better seeds, fertilizers, etc., must of course be an urgent function of the Government.

The fifth problem is the basic one—agriculture. How can rural universities impart at the lowest and simplest level sufficient of the latest available knowledge to transform agriculture from a pathetic way of life into a successful business proposition. This appears difficult, but the peasant already has some “hereditary” knowledge acquired from generations and commonsense. He may have to unlearn some of it but his readiness to reform and willingness to learn must be encouraged.

If simple, applied and directly relevant courses can be designed on soils, ploughing, water, seeds, crops, manure, botany, livestock feeding and breeding, etc., and imparted with care and imagination, the agriculturists who are dealing with these subjects in their daily work will readily see where they can improve and where they have been inefficient or even wrong.

There is no need to spell out here an entire curriculum on various subjects. Most students of the subject are familiar with the parameters involved. And we have the experience of such pioneering institutions as the Gandhigram Rural Institute (Deemed University) in Tamil Nadu from which we can learn in planning these rural universities.

A unique feature of these proposed rural universities will be the effective bridging of the gap between teaching theory in the classroom and the practical work on the fields outside the classroom just a stone's throw away. The daily work of the working peasant on the farm will be enriched by what he learns in the classroom. Everything that he learns he has a chance of putting into practice on the farm in which he works and has his being.

And last, the mere presence of a university in the heart of a rural area surrounded by villages

will have a beneficent psychological repercussion; it will overcome the current general apathy and inertia and instil in the people an ambition for higher standards of life and the will and determination to work for such standards.

Each proposed rural university should be set up in a relatively good farming region, with room to expand, where there is a depth of fertile soil and a plentiful water supply. If possible, the rural university should be built not too far from a main road or a feeder or link road, or a railroad, within reasonable distance of the local town and market. The university will have cubicles, classrooms, workshops and laboratories—simple and functional—to meet rural needs. The university will have its own dairy and poultry farm, its garden for vegetables, flowers and fruits and its nursery for trees. With the supply of cheap electric power and the provision of some road communication with all the neighbouring villages, the university may well help the rural population identify their wellbeing with the rural university in their midst.

(Excerpts from the convocation address delivered by Dr. S. Chandrasekhar, Vice-Chancellor, Annamalai University, at Gauhati University on April 7, 1978.)

Social Security: Key Role for Students

Dr. M.S. Swaminathan, Director-General, Indian Council of Agricultural Research, while delivering the convocation address at the University of Bombay posed a question as to what could the staff and students of a university do in assisting government and the community to achieve the socio-economic goals of the next Plan? In his view, two important contributions can be made. First, an inter-disciplinary analysis of the attitudinal and organisational changes needed for promoting growth for social justice can be made in each area at the micro-level. Secondly, there could be direct participation in action plans designed to

demonstrate how the goals can be achieved.

We have not benefited so far from two of the most potent instruments used by nature both in the origin and evolution of life and in the organisation of biological systems. The first is the principle of synergy. Synergy means behaviour of whole systems unpredicted by the behaviour of the parts taken separately. It involves the generation of multiplier effects among the components of a system, so that the ultimate product is something more than the sum of the parts.

The compartmentalisation of institutions and individuals who

are to perform specific tasks in a developmental project denies us the benefit of synergetic interactions, which alone can help to give a larger end-result from limited inputs. Our project working model not only fails to derive benefit from potential multiplier effects, but does not often generate even additive effects. This explains our low growth rates. In fact, we have come to a stage in our agricultural advance where the absence of social synergy in terms of land use planning and water and pest management is becoming a serious handicap to further progress. A pre-requisite for achieving our national goals is the generation of social synergy.

What is social synergy? Ruth Benedict, one of the earliest anthropologists to apply the concept of synergy in social sciences, says, "Societies where non-aggression is conspicuous have social orders in which the individual by the same act and at the same time serves his own advantage and that of the group.....Non-aggression occurs in these societies, not because people are unselfish and put social obligations above personal desires, but because social arrangements make these two identical."

"Cultures with low social synergy are those in which the social structure provides for acts which are mutually opposed and counteractive, and cultures of high synergy where it provides for acts which are mutually reinforcing.... In cultures with high social synergy, institutions ensure mutual advantage from their undertakings, while in societies with low social synergy the advantage of one individual becomes a victory over another, and the majority who are not victorious must shift as they can."

According to Abraham Maslow: "The high synergy society is the one in which virtue pays. . . High synergy societies all have techniques for working off humiliation, and the low synergy societies uniformly do not."

High synergy society seems to be another name for what Gandhiji described as the *sarvodaya* society. It is also evident

that our society as at present organised is a low synergy society. The joint family system, an experiment in social synergy, is vanishing. The exceptions are to be usually found in tribal communities. Strangely, much of the developmental planning for tribal areas stresses individual rather than group effort and thus will lead to these societies also becoming low synergy ones. What steps can we take to ensure that we move from this to a better state of affairs?

While the political leadership will have to play a key role in promoting social synergy, educational institutions, particularly our universities, can and should play a catalytic part in this movement.

The second important missing ingredient of the pathway of progress we have chosen so far is inadequate attention to the problem of self-replication of programmes. The secret of success of the chemical substance of heredity, the DNA molecule, lies in its ability to make an interminable number of copies of itself. If we wish to have a self-replicating movement, project should promote self-help. The external input should have a catalytic role and not a self-perpetuating role. Unfortunately, we have very few projects, particularly in rural areas, which have grown on their own momentum when the external input is withdrawn. This is true of projects in the field of nutrition, health care, malaria control and soil conservation. This is why government programmes do not usually trigger self-propelling growth, enabling small government programmes to become mass movements. Yet, there are examples such as our wheat revolution which give us an insight into the making of developmental symphonies. The wheat revolution became a self-propelling movement, because of the synergy generated by matching a package of economically viable technology with appropriate packages of services and public policies.

We often identify maladies but refrain from applying the appropriate remedies. Thus, the malady

analysis itself becomes a sterile one and gives only psychological satisfaction to those who make it. While time passes by, we find that the emerging technology, whether in agriculture or industry which is appropriate to our ecological and socio-cultural milieu, demands for its success a social infrastructure which can promote and sustain group action. Water harvesting in dry areas, crop planning to suit different weather models, pest management and post-harvest technology, all demand for efficient adoption community action on the part of a village or watershed community. If we continue to neglect this aspect of social engineering, the cost of production will rise to uneconomic levels, productivity will remain low and social disparities will widen. Maharashtra offers unique opportunities for demonstrating the power of social and scientific synergy in achieving the triple goals of the next Plan. There is not only opportunity for a rapid improvement in terrestrial productivity under a wide range of conditions extending from the high rainfall areas of the Konkan coast to the high moisture retentive soils of Vidarbha, but also a great potential for fostering integrated sea farming involving a suitable blend of capture and culture fisheries. Prosperous coastal communities comprising fishermen and landless poor can be created by taking to mariculture along with the planting of casuarina, cashewnut and coconut.

Appropriate post-harvest technology at the village level is a potent method of increasing the wealth of the village through the production of value-added products from agricultural raw material. A rice or jowar based farming system can become the base for animal husbandry programmes for the rural poor, through the introduction of fortification procedures which make the straw or stem into a complete animal food. During 1976-77, about 5.8 million tonnes of cattlefeed were exported. This included about 4.5 million tonnes of oilcakes. Our dairy experts calculate that in contrast to the earning of about Rs. 210

crores through the export of oil-cakes, dairy products worth over Rs 1,000 crores could be produced within the country by utilising them in well planned dairy enterprises. Fostering mixed farming in ravine and degraded lands can also stimulate interest in sylvi-pastoral systems and in planting leguminous shrubs and trees which can enrich soil fertility through biological nitrogen fixation, supply fodder and feed and provide fuel. We still have the opportunity for achieving self-sufficiency in energy requirements bypassing the pathways which lead to an increasing consumption of non-renewable forms of energy. Under tropical conditions, both growth and decay are accelerated. Hence, if the principle of recycling is used effectively, current liabilities like leaching of nutrients, mineralisation of organic matter and loss of run-off water can be converted into assets.

Maharashtra has a record of successful cooperatives. The State has also experience of organising a minimum yield guarantee scheme in several crops. Hence, it can provide the lead in organising crop and cattle insurance based on an area approach, as recommended by Prof V.M. Dandekar. If small and marginal farmers are insulated against risk, the diffusion of technological benefits will be more rapid.

Public health is another area where social synergy could result in speedy progress. An integrated rural health programme involving safe water supply, disposal of human and other wastes, preparation of low-cost balanced diets for pregnant and lactating mothers and pre-school children, prevention of nutritional blindness, control of anaemia, effective immunisation against communicable diseases and prevention of the recurrence of malaria, can be taken up on a large scale and made to yield measurable results within a specific period, only through community action supported by government initiative.

There is a vast untapped yield reservoir available even at current levels of technology in most production systems. The highest priority in the allocation of

resources should go to deriving benefit from this reservoir. To do this, however, we will need precise information on the constraints responsible for the gap between potential and actual yields. An inter-disciplinary constraint analysis undertaken jointly by biological and social scientists and students would help in developing programmes designed to elevate and stabilise yields.

How can the university contribute to the creation of an awareness of the economic benefits of synergy and self-help? The academic answer will be the organisation of a course or even a degree in Synergetics. This pathway has also been proved to be futile in many areas. The only worthwhile pathway is action. For effective action, there is need for organisation. Probably, the Bombay University along with the general and Agricultural Universities of Maharashtra can constitute a Rural Service Corps of young professionals, drawn from both the faculty and students. Members of the Corps, after careful pre-deployment training, can fill critical gaps in development projects sponsored by both official and voluntary agencies. The training should impart the specific skill needed as well as the ability to foster synergy among components of the concerned programme. Both central and state governments are planning to step up their outlay on rural development, irrigation, provision of minimum needs, cottage and small scale industries and public works. Tax incentives have been offered to industry for sponsoring projects in rural areas. Members of the Rural Service Corps can be made available by the university for accomplishing precise tasks and not for non-specific *sharmdan*.

India is in a unique position to marry *Vigyan* and *Vedanta*. At no time in human history has there been so much opportunity to achieve a quantum jump in human well-being and happiness, as there is now.

VCs meet Desai

On behalf of the Association of Indian Universities, a delegation consisting of nine Vice-Chancellors met the Prime Minister of India and presented to him a memorandum emphasising the need for maintaining peaceful academic atmosphere in universities. Congratulating the Prime Minister on the bold plea made by him to the political parties for keeping out of the university campuses, the delegation requested the Prime Minister to persuade the Parliament to adopt a resolution embodying the spirit of the statement made by him to the Parliament. The delegation also requested the Prime Minister to explore possibilities of evolving a national consensus in this matter.

In the course of discussions, the Prime Minister emphasised the urgent need for universities to restructure the educational system as in his view education was central to every other activity and to development. He also emphasised the need for reducing costs in education and for higher productivity of the entire higher education system. This would involve the academics putting in hard work. The Prime Minister emphasised that this should be possible for the universities to achieve. The Association on its behalf assured the Prime Minister of its full cooperation in the matter.

The following Vice-Chancellors comprised the delegation.

1. Shri I. J. Patel, VC, Gujarat Agricultural University;
2. Dr. C. R. Mitra, Director, BITS;
3. Dr. Malcolm S. Adiseshiah, VC, University of Madras;
4. Dr. A. K. Dhan, VC, Patna University;
5. Dr. Ramaranjan Mukherjee, VC, Burdwan University;
6. Dr. P. G. Deo, VC, Indore University;
7. Dr. R. C. Mehrotra, VC, University of Delhi;
8. Shri K. K. Mandal, VC, Bihar University;
9. Dr. Amrik Singh, VC, Punjabi University; and
10. Shri M. S. Ramamurthy, Secretary, AIU.

Workshop on Opium Poppy Research held at Udaipur

The Indian Council of Agricultural Research in collaboration with the University of Udaipur organized an All India Workshop on Opium Poppy at the Department of Agronomy of the University on 11th, 12th and 13th April. The objective of the workshop was to assess current status of our knowledge on growing and processing of opium poppy in India and to formulate guidelines for future investigations. It was realised that opium poppy is grown in about 64,000 hectares by 2.5 lakh families in 8,000 villages in M.P., Rajasthan and U.P. It earns over Rs. 40 crores in foreign exchange annually. In all 50 scientists working on this crop and officers of Narcotics Department from different parts of the country participated. In addition to technical sessions, a "meet the

Director General (Crop Sciences) emphasised that the Council is in favour of providing research support to all the three growing States. Accordingly, a co-ordinated Research Project with Centres at University of Udaipur, Jawaharlal Krishi Vishwa Vidyalaya at Mandasaur, ANDAU, Faizabad and Indian Agricultural Research Institute, New Delhi be formulated; it was further recommended that National Botanic Gardens, Lucknow, Central Drug Research Institute, Lucknow, and Regional Research Laboratory, Jammu be associated as co-operative centres in the programme.

This programme is oriented to include crop protection studies as well. For this purpose details of several trials in the disciplines of Plant breeding and Genetics, Agronomy and Plant Protection

State Agricultural Universities. It was also decided to bring out a schedule of Plant Protection calendar for large scale adoption by growers, through Narcotics Department.

ISM to impart training in Mine Electronics

As a part of its programme of diversifying the educational effort into new areas of growing relevance, the Indian School of Mines plans to start this year a programme of imparting training in Mining Electronics. The training which would be advanced Diploma level, would be imparted to diploma holders employed in the mining industry. This latest programme is being started with a grant-in-aid of Rs. 8.3 lakhs from the Electronics Commission, spread over a 4-year period.

It may be recalled that the Electronics Commission had, towards the end of 1976, set up a panel on Mining Electronics and Telecommunications to study the application of electronics in the fast-growing mining industries (which are at the same time also being mechanised and modernised), in the context of the practice in other countries, and to make recommendation as to how such application could be promoted on a time-phased basis. The Group had made detailed recommendation, in respect of mining communication and tele-control; mine safety and instrumentation; control and industrial electronics; computerisation; and manpower and training. Lt. Gen. KS Garewal, the Coal India Chairman, had headed the Panel, while the group on Manpower and Training was led by Prof GS Marwaha, ISM Director. The current proposal of ISM to start a course on Mine Electronics is in pursuance of one of the important recommendation of this panel.

Appreciating the growing importance of electronic application in the mining and petroleum industries, the ISM Executive Board has decided last year itself to create a new Department of Electronics and Instrumentation. The current grant-in-aid from the Electronics Commission will go a long way in strengthening this young-

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growers session" was held with the farmers at Chittorgarh, the heart of opium growing region.

The workshop recommended for undertaking an extensive collections of germplasm and its evaluation by National Bureau of Plant Genetics Resources, New Delhi and Notional Botanic Gardens, Lucknow. It was further suggested that special attention should be given to identify types which have resistance against downy mildew and powdery mildew which take a heavy toll of the crop. In this context it was further resolved that genetic base be widened by obtaining accessions from other opium growing countries of the world.

The workshop recommended for a strong co-ordinated approach on research in Poppy crop. The Dy.

were prepared for operation in the next rabi season.

The deliberations brought to surface availability of a number of promising selections at different research stations in the country. It was recommended that these promising selections be put in a multilocal trial for further evaluation. The multiplication of seeds of these selections was recommended to be taken up at Karnal Farm of the Pusa Institute and Kota Farm of Udaipur University. These seeds would be made available for mini-kit trials on farmers' fields in collaboration with Narcotics Department.

In the field of extension, the workshop recommended for providing of soil testing facilities to the growers through Directorate of Extension Education of the

est of the departments at the Indian School of Mines.

Dr. RN Mathur, Officer-in-Charge of the Calcutta Repair and Maintenance Centre of the Central Scientific Instrument Organisation (of Chandigarh) is expected to join the School shortly as Professor of Electronic Instrumentation. The School possesses a good Electronics Laboratory, and its electronics group has already successfully undertaken, again with grant-in-aid by the Electronics Commission, the development of a defectoscope for wire ropes and also that of a multifrequency geophysical prospecting instrument.

Bengali manuscript library opened in Rabindra Bharati University

A Bengali Manuscript Library was opened under the auspices of the Bengali Department of the Rabindra Bharati University on the occasion of the birth anniversary of Krittivasa Ojha, the 15th century Bengali translator of the Ramayana.

Dr. P.C Gupta, the Vice Chancellor of the University sent his message. Dr. Ajit Kumar Ghosh, the Head of the Bengali Department chaired the occasion and dwelt on the propriety of the ceremony. Dr. Sibaprasad Bhattacharya, Dr. Arun Bose and Dr. Debnath Banerjee, all belonging to the Bengali Department discussed on the life and work of the poet Krittivasa. Dr. Panchanan Chakraborty and Dr. Rabindu Gupta donated some rare Bengali and Sanskrit manuscripts to the MSS Library. Dr. Nirmal Das, the Lecturer-in-charge of the Manuscript Library, said that some manuscripts preserved in the Library belonged to the 17th and 18th century. The students of the Bengali Department took part in the programme with relevant pieces of music, recitation and paintings.

Madras IIT prepares laboratory manual

The Mechanical Engineering Education Development Centre of the Indian Institute of Technology, Madras, has made significant progress during the past

six years. The activities of the Centre cover a wide spectrum of educational development programmes. The main thrust of the centre has been in the following directions:

- (a) Updating and upgrading the mechanical engineering undergraduate curricula so as to be consistent with the modern developments in science and technology and the national development programmes. The Centre has interacted with the sister institutions particularly in the southern region, and in this process held a large number of seminars, symposia and study group meetings. Industrial participation was also included in some of these deliberations in order to get a wholesome programme in engineering education.
- (b) The Centre, with the active participation and support of the faculty in the Department of Mechanical Engineering and other allied departments, has brought out a number of monographs for the use of the students and teachers. These monographs not only aim to enrich the teaching material but also add new materials relevant to modern developments. These are sent to all the engineering colleges in the country. Some of the monographs have attracted the attention of the publishers, who have contacted the Centre in the matter of publishing the material as texts for undergraduate engineering education.
- (c) The Centre has been looking carefully into all aspects of engineering education such as examination and evaluation procedures, importance of social sciences and humanities in the engineering curriculum, basic science content, elective projects, sandwich programmes, etc. Several seminars on these related subjects were also held.
- (d) Laboratory is a very impor-

tant component of engineering education and a laboratory manual has been prepared after a long process of editing, revaluing and refining.

- (e) The Centre has attached much importance to the higher secondary education which is a pre-requisite for admission to engineering institutions. With the establishment of 10+2 system a number of educational problems have arisen. In order to obtain the view point of educationists including experts in higher secondary school education a group discussion was held.
- (f) Various other programmes such as question bank preparation, evaluation of teaching methods, effective interaction between student and teacher, etc. are being pursued.

The faculty of the Centre have been enriched by the challenging task assigned to them and look forward to serve the cause of engineering education in a significant way. The Centre looks forward to the interaction with faculty of not only this institute but all the engineering colleges in the country for evolving an effective and satisfying undergraduate engineering education programmes.

Reservation of medical seats in Karnataka

The Health Minister of Karnataka has been able to persuade the managements of four private medical colleges in the State to earmark at least 50% of their seats exclusively for students coming from the Karnataka State without any capitation fees. The Government was anxious, he said, to ensure the flow of adequate funds for the recurring expenses of these medical institutions. It was estimated that each of these medical colleges would require about rupees fifty lakhs a year for maintenance. The government was therefore thinking of allowing these managements to collect up to rupees thirty-five thousand a seat for

twenty per cent of the remaining fifty per cent seats available with them. In addition it is also proposed to work a new formula for admission of students in private medical colleges taking into consideration certain changes in the rules laid down for selection of students to the government medical colleges. One of the changes contemplated was to consider the marks obtained by the candidates in the second year pre-university course examination only for determining the merit as against the present practice of taking into account the performance of candidates in the previous examinations.

The selection of students for government medical colleges would be strictly according to the recent order of the government making reservations for backward classes. These reservation rules would also apply to fifty per cent of the free seats in private medical colleges. There would be separate selection committees for the government and private medical colleges.

Education Ministry's new thrust for non-formal education

The Union Education Ministry has prepared a rupees four crore scheme for providing non-formal part-time education for the benefit of drop-outs or the children who had not been attending school for some reasons. Another outlay of rupees fifty crores will be required for implementing the scheme during the sixth plan. A working group set up by the Education Ministry earlier in its report has pointed that 74% of the total non-enrolled children were in the educationally backward States of Andhra Pradesh, Bihar, Jammu and Kashmir, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh and West Bengal. Of the total non-enrolled children, nearly two-third happened to be girls. Moreover the vast majority of children who had been attending school come from the weaker sections such as the scheduled caste and scheduled tribes and landless agricultural labourers. The report of the Departments of Education and

Cultural Affairs for 1977-78 outlines a time-bound programme for imparting elementary education to children up to the age of fourteen. The programme envisages the enrolment of ninety per cent of children in the six-fourteen age group before the end of the next Five-Year Plan.

According to the report of the working group, an additional enrolment of 4.12 crore children would be necessary to meet the programme objectives. Of this about 3.20 crores children would be covered in the next five years and the remaining in another two years.

Regulation of enrolments in institutions of higher learning and improving the quality of education and research has been suggested. This would mean the adoption by the government of the key point of a policy frame prepared by the University Grants Commission in consultation with the Prime Minister, Mr. Morarji Desai, and discussed by the Association of Indian Universities in their Rajkot session.

The University Grants Commission policy document has however suggested that admissions to institutions of higher learning at first degree and postgraduate stages should be selective on the basis of merit with reservation of at least half the seats for all weaker sections.

The growth rate of universities and colleges had also declined since the UGC now clears for central assistance only the institutions that either break new ground or provide quality education for weaker sections or is in backward areas. No new university was started last year and the number of universities has remained at 125. The check on new colleges has helped existing institutions to have larger enrolments. This has been conducive to higher standards of collegiate education. To ensure that weaker and under-privileged sections are not denied access to higher education, seats are reserved for them and remedial courses provided. The University Grant Commission has relaxed the eligibility conditions for admissions to colleges in tribal and other back-

ward areas which are given liberal assistance for construction of academic buildings and hostels.

English becomes optional in Gujarat

The Government of Gujarat is considering a suggestion for making English as the optional subject at the college level. The State Government has already abolished English from the S.S.C. classes. The Education Minister Shri Navalbhai Shah is convening a conference of the Vice-Chancellors of the Universities in the State to discuss this problem. Gujarati is the medium of instruction in Gujarati Colleges including the medical and engineering. Now if the new proposal is accepted, English will go from colleges even as a subject.

New educational policy being framed

Dr. P.C. Chunder, Union Education Minister, said that the broad outline of new education policy would be presented to the Parliament in its next session. Instead of appointing a new Education Commission, the Education Ministry is conducting policy exercises in consultation with Dr D.S. Kothari and Mr Prem Kirpal of the Education Commission on whose report the present policy is based as well as with other experts.

The Union Education Minister said that he would call a meeting of the State Education Ministers soon for consultation before the new education policy was finalised.

Group insurance scheme introduced in Kurukshetra

As a part of the welfare of the employees of the Kurukshetra University, a Group Insurance Scheme has been introduced in it.

According to the scheme, if any employee dies in harness, his legal heir would get Rs. 5,000/ from the Life Insurance Corporation of India. The rate of premium (non-refundable) under this scheme will come to about Rs 2.26 per month per employee; Re. 1/- will be contributed by the employee concerned and the balance of Rs. 1.26 by the University.

Conferences, Seminars and Workshops

May—July 1978

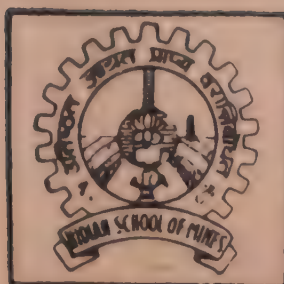
Date	Title	Venue	Sponsoring Body
1978			
20 April-10 May	Summer Institute in laboratory course in basic electronics	Tripunithura	University of Cochin
1-14 May	Fatigue design	Madras	IIT, Mech. Engg. Dept.
1-27 May	Summer Institute in Life Sciences	Bombay	St. Xavier's College
1-28 May	Summer Institute in Mathematics	Jammu	University of Jammu
1-30 May	Summer Institute in Economics	Nagpur	Nagpur Univ.
1 May-2 June	Summer Institute in Public Administration	Hyderabad	Osmania Univ.
1 May-5 June	Summer Institute in English Language Teaching	Bangalore	Reg. Inst. of English & British Council
1 May-5 June	Summer Institute in English Language Teaching	Hyderabad	Central Inst. of English & Foreign Languages & British Council
1 May-5 June	Summer Institute in English Language Teaching	Ootacamund	Govt. Arts College & British Council
1 May-5 June	Summer Institute in English Language Teaching	Patiala	Panjabi Univ. & British Council
2-13 May	Centrifugal fans and compressors for scientists & engineers	Madras	IIT, Mech. Engg. Dept.
3-5 May	Management information systems	Goa	Indian Institute of Management, Bangalore
3-8 May	Advanced level seminar on problems of non-linear continuum Mechanics	Burdwan	Univ. of Burdwan, Dept. of Mathematics.
3-20 May	Short term course on Microprocessor and applications	Bombay	Radar Project Centre, IIT
5 May	Education and rural development (Workshop)	Delhi	Institute of Economic Growth
5-7 May	Electoral reforms in India	Burla	Sambalpur Univ.
8-13 May	Maintenance Management engineering	Dhanbad	Indian School of Mines
8-26 May	Advanced level institute in plant anatomy	Vallabh Vidyanagar	Sardar Patel Univ.
8-31 May	Summer Institute in non-conventional automotive fuels and power plants	Varanasi	BHU
8-31 May	Summer Institute in Physical education	Nandanam, Madras	YMCA College of Physical Education
10-30 May	Summer Institute in Research Methodology in Law	Ahmedabad	Gujarat Univ.
10-31 May	Summer Institute in Botany	Kolhapur	Shivaji Univ.
10 May-7 June	Short course on Mineral Engg.	Kharagpur	Dept. of Chemical Engg. IIT
11-13 May	Workshop on reliability in Semi-Conductor devices	Bombay	Radar Project Centre, IIT
11-31 May	Summer Institute in Physics	Sambalpur	Sambalpur Univ. Dept. of Physics
15-19 May	Housing & environment—planning development & management	Bangalore	Indian Institute of Management, Bangalore
15-27 May	Rural environment and planning	Surat	S.V. Regional College of Engg. & Tech. and Indian Society of Tech. Education
15-27 May	Surface Mining	Dhanbad	Indian School of Mines
15-31 May	Short term course on Microwave integrated circuits	Bombay	Radar Project Centre, IIT
15 May-3 June	Summer Institute in drives and power electronics	Hyderabad	Osmania Univ.
15 May-3 June	Summer Institute in Orientation Course in engineering for Arts and English language teachers	Karaikudi	A C College of Engineering
15 May-7 June	All India advanced level short-term institute in polymer chemistry	Vallabh Vidyanagar	Sardar Patel Univ.
15 May-12 June	Summer Institute in Current trends in Applied Zoology	Pune	Univ. of Poona
15 May-14 June	All India Summer Inst. on Research in teaching	Pune	SNDT Women's Univ.
15 May-17 June	Short term course in Mathematics on differential and integral equations	Bangalore	Indian Institute of Science
15 May-17 June	Summer Institute in Molecular structure	Pune	Univ. of Poona, Dept. of Chemistry
16 May-13 June	Summer institute of Methods of Educational Research	Varanasi	BHU

Date	Title	Venue	Sponsoring Body
17 May-13 June	Summer Institute in Symbolic logic	Madras	Ramakrishna Mission Vivekananda College
18 May - 28 June	Summer Institute in Mathematics	Cuttack	Ravenshaw College
20 May-9 June	Summer Institute in Education	Indore	Univ. of Indore
21 May-11 June	Summer Institute in Psychology	Madras	S.I.E.T. Women's College
21 May 17 June	Short term Institute in Chemistry	Amritsar	Guru Nanak Dev University
22-27 May	Investment & credit planning for rural development	Bangalore	Indian Institute of Management,
22 May-11 June	Workshop on animal physiology	Indore	University of Indore
22 May-12 June	Summer Institute on Mathematics and its applications to Theoretical Chemistry	Indore	Holkar Science College
22 May-17 June	All India Summer Institute in Mathematics	Pune	Univ. of Poona
25-27 May	Workshop on materials and devices for Microwave system	Bombay	Radar Project Centre, IIT
25 May-10 June	XXII INCOSPAR Meeting (Committee on Space Research)	Bangalore	COSPAR & Indian Inst. of Science
29 May-3 June	Telecommunication in Mines	Dhanbad	Indian School of Mines
29 May 13 June	Environmental pollution monitoring and control	Kanpur	Harcourt Butler Tech. Inst.
29 May-19 June	Summer Inst. in Economics	Hyderabad	Osmania Univ.
29 May-19 June	Summer Inst. in Bio-chemistry	—do—	—do—
2nd week (May)	Seminar on chemical technology for fertilizers	Sindri	Inst. of Engineers
May 1978	National Seminar on Centre-State relations in India	Waltair	Andhra Univ. (Dept. of Econ.)
May 1978	Round table on Concrete technology	Calcutta	Inst. of Engineers (India)
May 1978	Seminar on Modern technology and rural development. Part II	Bhopal	Bhopal Univ.
1-14 June	Seminar on the role of physics education for rural development	Khallikote (Ganjam)	RCM Sc. College
1-22 June	Summer Inst. in Geography	Varanasi	B.H.U.
1 June-31 July	Management of Dairy Development Programme	Karnal	National Dairy Research Inst.
5-10 June	Corporate planning Seminar	Hyderabad	Admin. Staff College
5-17 June	Modern Analytical techniques for the mineral industry	Dhanbad	Indian School of Mines
5 June-6 July	Summer Institute in Botany	Nagpur	Nagpur Univ.
10-30 June	Summer Institute in history	Berhampur	Berhampur Univ.
15-28 June	Summer Institute in Instructional technology with special reference to audio-visual communication for effective learning	Pantnagar	GB Pant University of Agric. & Tech
20 June-13 July	All India Workshop in physiology and biochemistry	Indore	Univ. of Indore
22-24 June	All India Symposium on Bio-medical engineering	Hyderabad	Osmania Univ. & Biomedical Engg. Society of India
26 June-14 July	Summer School on Nuclear Structure & Nuclear Reaction Mechanisms	Bangalore	Indian Inst. of Science
June 1978	National Symposium on queues inventories and reliability	Annamalainagar	Annamalai Univ.
June 1987	Round table on electrical standardisation for laboratory techniques	Calcutta	Inst. of Engineers (India)
2nd week of June	Aspects of technique and style in modern Marathi literature	Sangli	Willingdon College
June-July	Analysis and design of EHV systems	Madras	IIT, Energy Research Centre
10-22 July	Computer programming & computer oriented numerical methods	Dhanbad	Indian School of Mines
17-28 July	Investment planning & project evaluation	Hyderabad	Admin. Staff College
10-12 July	Intensive course for industrial participants on heat exchanger design	Kanpur	I.I.T.
10-15 July	Materials planning	New Delhi	Indian Inst. of Public Admn.
17-31 July	Design of concrete shell structures	Bangalore	Indian Inst. of Science
19-29 July	Tribal Development Administration	New Delhi	Indian Inst. of Public Admn.
24 July-5 Aug.	Geotechnical engineering	Dhanbad	Indian School of Mines
26-27 July	Growth prospects for electronics in 1980	Bangalore	Inst. of Engineers (India)
31 July-11 Aug.	Performance budgeting	New Delhi	Indian Inst. of Public Admn.
July 1978	Symposium on industrial system information processes & control	Kurukshetra	Regional Engineering College

Subject Index

Date	Title	Venue	Sponsoring Body
Agriculture			
1 June-31 July	Management of Dairy Development Programme	Karnal	National Dairy Research Institute
2nd week of May	Seminar on Chemical technology for fertilizers	Sindri	Institution of Engineers
Business Management			
17-28 July	Investment planning & Project evaluation	Hyderabad	Admin. Staff College
3-5 May	Management information systems	Goa	Indian Institute of Management, Bangalore
10-15 July	Materials planning	New Delhi	Indian Inst. of Public Admin.
31 July-11 Aug.	Performance budgeting	New Delhi	Indian Inst. of Public Admin.
Computers			
10-22 July	Computer programming & computer oriented numerical methods	Dhanbad	Indian School of Mines
Economics			
1-30 May	Summer Institute in Economics	Nagpur	Nagpur University
29 May-19 June	Summer Institute in Economics	Hyderabad	Osmania University
Education			
15 May-14 June	All India Summer Institute on Research in teaching	Pune	SNDT Women's University
5 May	Education and rural development (Workshop)	Delhi	Inst. of Economic Growth
20 May-9 June	Summer Institute in education	Indore	Univ. of Indore
15-28 June	Summer Institute in Instructional technology with special reference to audio-visual communication for effective learning	Pantnagar	GB Pant Univ. of Agric. & Tech. BHU
16 May-13 June	Summer Institute in methods of educational research	Varanasi	YMCA College of Physical Education
8-31 May	Summer Institute in physical education	Nandanam, Madras	
Electricity and Electronics			
June-July	Analysis and design of EHV systems	Madras	IIT Energy Research Centre
26-27 July	Growth prospects for electronics in 1980	Bangalore	Institution of Engineers (India)
June	Round table on electrical standardisation for laboratory techniques	Calcutta	Institution of Engineers (India)
3-20 May	Short-term course on Microprocessor and applications	Bombay	Radar Project Centre, IIT
15-31 May	Short-term course on Microwave integrated circuits	Bombay	Radar Project Centre, IIT
15 May-3 June	Summer Institute in drives and power electronics	Hyderabad	Osmania Univ.
20 April-10 May	Summer Institute in laboratory course in basic electronics	Tripunithura	Univ. of Cochin
25-27 May	Workshop on Materials and devices for Microwave system	Bombay	Radar Project Centre, IIT
11-13 May	Workshop on reliability in Semi-conductor devices	Bombay	Radar Project Centre, IIT
Engineering			
3-8 May	Advanced level seminar on Problems of non-linear Continuum mechanics	Burdwan	Univ. of Burdwan, Dept. of Mathematics
22-24 June	All India Symposium on Bio-medical engineering	Hyderabad	Osmania Univ. & Biomedical Engg. Society of India
2-13 May	Centrifugal fans and Compressors for Scientists & Engineers	Madras	IIT, Mech. Engg. Dept.
17-31 July	Design of concrete shell structures	Bangalore	Indian Inst. of Science
1-14 May	Fatigue design	Madras	IIT, Mech. Engg. Dept.
24 July-5 Aug.	Geotechnical engineering	Dhanbad	Indian School of Mines
10-12 July	Intensive course for industrial participants on heat exchanger design	Kanpur	IIT
8-13 May	Maintenance Management engineering	Dhanbad	Indian School of Mines
May	Round-table on Concrete Technology	Calcutta	Inst. of Engineers (India)
8-31 May	Summer Institute in Non-conventional automotive fuels and power plants	Varanasi	BHU
15 May-3 June	Summer Institute in Orientation course in engineering for Arts and English language teachers	Karaikudi	AC College of Engineering
Geography			
1-22 June	Summer Institute in Geography	Varanasi	BHU
History			
10-30 June	Summer Institute in history	Berhampur	Berhampur Univ.
Law			
10-30 May	Summer Institute in Research Methodology in Law	Ahmedabad	Gujarat Univ.

Date	Title	Venue	Sponsoring Body
Life Sciences			
8-26 May	Advanced level institute in plant anatomy	Vallabh Vidyanagar	Sardar Patel Univ.
20 June-13 July	All India Workshop in physiology and bio-chemistry	Indore	Univ. of Indore
29 May-19 June	Summer Institute in bio-chemistry	Hyderabad	Osmania Univ.
10s31 May	Summer Institute in botany	Kolhapur	Shivaji Univ.
5 June-6 July	Summer Institute in Botany	Nagpur	Nagpur Univ.
15 May-12 June	Summer Institute in Current trends in applied Zoology	Pune	Univ. of Poona
1-27 May	Summer Institute in Life Sciences	Bombay	St. Xavier's College
22 May-11 June	Workshop on animal physiology	Indore	University of Indore
Literature & Language			
2nd week of June	Aspects of technique and style in modern Marathi literature	Sangli	Willingdon College
1 May-5 June	Summer Institute in English Language Teaching	Bangalore	Reg. Inst. of English & British Council
1 May-5 June	Summer Institute in English Language Teaching	Hyderabad	Central Inst. of English & Foreign Languages & British Council
1 May-5 June	Summer Institute in English Language Teaching	Ootacamund	Govt. Arts College & British Council
1 May-5 June	Summer Institute in English Language Teaching	Patiala	Punjabi Univ. & British Council
Mathematics			
22 May-17 June	All India Summer Institute in Mathematics	Pune	Univ. of Poona
June	National Symposium on queues inventories and reliability	Annamalainagar	Annamalai Univ.
15 May-17 June	Short term course in Mathematics on differential and integral equations	Bangalore	Indian Institute of Science
18 May-28 June	Summer Institute in Mathematics	Cuttack	Ravenshaw College
1-28 May	Summer Institute in Mathematics	Jammu	Univ. of Jammu
22 May-12 June	Summer Institute on Mathematics and its Applications to theoretical chemistry	Indore	Holkar Science College
Mining and Minerals			
5-17 June	Modern analytical techniques for the mineral industry	Dhanbad	Indian School of Mines
10 May-7 June	Short course on Mineral Engineering	Kharagpur	Dept. of Chemical Engineering, IIT
15-27 May	Surface Mining	Dhanbad	Indian School of Mines
29 May-3 June	Telecommunication in Mines	Dhanbad	Indian School of Mines
Philosophy			
17 May-13 June	Summer Institute in Symbolic logic	Madras	Ramakrishna Mission Vivekananda College
Physics and Chemistry			
15 May-7 June	All India advanced level short-term institute in polymer chemistry	Vallabh Vidyanagar	Sardar Patel Univ.
21 May-17 June	Short term institute in chemistry	Amritsar	Guru Nanak Dev University
15 May-17 June	Summer Institute in Molecular structure	Pune	Univ. of Poona, Dept. of Chemistry
26 June-14 July	Summer School on nuclear structure & Nuclear reaction Mechanisms	Bangalore	Indian Inst. of Science
11-31 May	Summer Institute in Physics	Sambalpur	Sambalpur Univ. Dept. of Physics
Pollution Control			
29 May-13 June	Environmental pollution monitoring and control	Kanpur	Harcourt Butler Tech. Institute
Psychology			
21 May-11 June	Summer Institute in Psychology	Madras	S.I.E.T. Women's College
Public Administration			
5-10 June	Corporate planning, Seminar	Hyderabad	Admin. Staff College
5-7 May	Electoral reforms in India	Burla	Sambalpur Univ.
May 1978	National seminar on Centre/State relations in India	Waltair	Andhra Univ. (Dept. of Economics)
1 May-2 June	Summer Institute in Public administration	Hyderabad	Osmania Univ.
Rural Development			
15-19 May	Housing & environment—planning development & Management	Bangalore	Indian Inst. of Management, Bangalore
22-27 May	Investment & credit planning for rural development	Bangalore	—do—
15-27 May	Rural environment and planning	Surat	S.V. Regional College of Engg. & Tech. & Indian Society of Tech. Education
May 1978	Seminar on Modern technology and rural development Part II	Bhopal	Bhopal Univ.
1-14 June	Seminar on the role of physics education for rural development	Khallikote (Ganjam)	RCM Sc. College
19-29 July	Tribal Development Administration	New Delhi	Indian Inst. of Public Admn.
Space Research			
25 May-10 June	XXII INCOSPAR Meeting (Committee on Space Research)	Bangalore	COSPAR & Indian Inst. of Science.



Indian school of Mines

No. 615007/78

Dated 8th April, 1978

Admission to Postgraduate Programme 1978-79

1. Applications are invited from candidates possessing requisite qualifications for admission to the following post-graduate programmes being offered, or likely to be offered, at the Indian School of Mines, which is deemed to be a University under the University Grants Commission Act:

Programme	Department
I. CISM/DISM/M Tech programme in Industrial Engg and Management (oriented towards mineral industries)	Dept of Ind. Engg and Management
II. One-year MSc Tech programme in Mineral Exploration	Dept of App Geology
III. One-year M Tech programme in Mining Geophysics	Dept of App Geophysics
*IV. One-year M Tech programme in Petroleum Exploration	Dept of Pet Engg
V. DISM/M Tech programme in Mineral Engg	Dept of Chemistry, Fuel and Metallurgy
*VI. DISM/M Tech programme in Fuel Engg	-do-
*VII. DISM/M Tech programme in Drilling Engg	Dept of Engg & Min Machinery
VIII. DISM/M Tech programme in Mining Machinery	Dept of Engg & Min Machinery
IX. Two-year Industry-Oriented M Tech programme in Mining (Specialisations offered: Mine Planning and Design/Rock Mechanics/Mine Environment)	Dept of Min Engg
X. Two-year Industry-Oriented M Tech programme in Opencast Mining	Dept of Min Engg
XI. Three-year Part-time M Tech programme in Mining	Dept of Min Engg

Note A: Programme Nos. IV, VI and VII are new ones, likely to be started this year.

Note B: Programme No. I consists of three terms of course work—each of 12-week duration. A student successfully completing any one of the three terms would be awarded the Post-graduate Certificate of CISM. A student completing any two terms, with additional guided project work of 4-month duration, would be awarded the postgraduate diploma of DISM; while a student completing all the three terms with guided research work for one year would be awarded the M Tech degree in Industrial Engg and Management.

Note C: Programmes Nos. V, VI, VII and VIII consist of one year of course work—successful completion of which leads to the grant of the postgraduate DISM diploma; candidates desirous of working for the M Tech degree are required to put in an additional year on project work.

2. Eligibility Requirements for the different programmes are given below:

- I. **CISM/DISM/M Tech (Industrial Engg):** A degree or equivalent in any discipline of Engg with at least 6 months training in the industry.
- II. **MSc Tech (Mineral Exploration):** M Sc or equivalent degree in Applied Geology.
- III. **M Tech (Mining Geophysics):** M Sc or equivalent degree in Geophysics or Applied Geophysics.
- IV. **M Tech (Petroleum Exploration):** M Sc in Geology (Preference will be given to candidates who have specialisation in Petroleum Geology/Sedimentology/Stratigraphy and Palaeontology OR at least one year's field experience in Petroleum Exploration).

- V. **DISM/M Tech (Mineral Engg):** A degree in Chem/Min/Mech/Met/Elec Engg or M Sc in Ore Dressing or equivalent.
- VI. **DISM/M Tech (Fuel Engg):** A degree in Min/Pet/Chem/Met/Mech/Elec/Fuel Engg or equivalent.
- VII. **DISM/MTech (Drilling Engg):** A degree in Mech/Min Machinery/Min/Automobile/Production Engg or equivalent.
- VIII. **DISM/M Tech (Min Machinery):** A degree or equivalent in Min//Mech/Elec Engg or Electronics.
- IX/XII. **M Tech in Mining:** A degree or equivalent in Mining Engg.
- X. **M Tech Opencast Mining:** A degree or equivalent in Mining/Civil/Electrical/Mechanical Engg or M Sc in Applied Geology. Non-mining persons should have one year experience in Opencast mines. In each case a candidate should have obtained at least 60% marks in the qualifying examination—relaxable to 50% for sponsored candidates and for those with field/research experience or special aptitude for research.
- 3.1 Preference will be given to sponsored candidates. (Sponsorship in this context means retention of lien on post and grant of suitable allowance). Application of sponsored candidates should carry suitable endorsement by the employer.
- 3.2 **Scholarships:** Un-sponsored students are eligible for a scholarship of @ Rs. 400/ p.m.
- 4.1 **Procedure for applying:** Application forms along with the Memorandum of Information for Post-graduate students can be obtained by sending a crossed Postal Order for Rs. 5/ (Rupees five only) made payable to the Registrar, Indian School of Mines, Dhanbad-826004.
- 4.2 **LAST DATE FOR RECEIPT OF THE COMPLETED APPLICATION IS JUNE 15, 1978.**

S.K. BORDIA
REGISTRAR

Adult Education—A Task for College Teachers

(Continued from page 903)

over the school-going age and are adults. It is necessary to educate them in a special way. To teach them reading and writing is not enough. To impart new knowledge about agriculture and other activities and also giving them the right kind of political education enabling them to play their part intelligently in the democratic process. Therefore adult education centres are suggested for this purpose. College students and teachers can be involved in such programmes of extra-mural activities in the educational system. It is a new dimension in higher education of our country. One of the tasks that colleges have now consciously to undertake is to organise their curricula in such a way that students will have real work experience and will have a sense of being closely related to the community in which their institution exists. In many parts of India higher education has spread so rapidly that there is a college in almost every sizeable village or township and at least physically, the college is not a thing apart from the life of the ordinary people. Every college has its own special neighbourhood. The college should have courses which include a study of the social and economic needs and problems of its own—neighbourhood to come together periodically and discuss their problems and ways in which educated youth could render a service.

The main task of adult education is not so much to provide people with information and literacy as to awaken in them a spirit of enquiry. This enables them to understand the real factors in their lives and in the social set up that keep them in the backward and oppressed conditions in which they find themselves. Adult education should be a process of liberation of the minds of people. It should help them to fight their own battles and work out their own salvation. Every college can prepare its own

programme of assisting its neighbourhood to awaken a proper understanding of the socio-economic factors which kept them permanently handicapped.

Adult education at present is looked upon as wholly extra curricular and unrelated to their academic studies. It will be more practical if we consider work-experience can be integrated with the total educational programme.

Several colleges from the present set up can be transformed into service institutions in which the learning process is integrated with active service to the community. The purpose of higher education should be mainly to enquire into and do research in the needs of community and problems and learning would be essentially of problem solving kind. At present our educational system has no profound sense of commitment to real learning and preparing students for life. There is little discipline in the outward behaviour of the academic community and no depth in the mental process also. Scholarship tends to be superficial, students and teachers seek short cuts in going through the academic courses and there is a cheating in examinations even on large scale. Therefore so-called colleges can be turned very easily into Janata colleges and they may be given this assignment of adult education. In the process of adult education a college can become in the best sense of the term a temple of learning and service station for society.

In short we can conclude that many of the colleges of these days can take a lion's share in the huge work of adult education of our beloved country and college teachers can become the pillars of nation in real sense of the term by taking active part in the field of adult education.

It is difficult to give the proper weightage to the executive part of the adult education the present set up of the college teaching. But now since the concept of college autonomy is not a remote possibility it will be easy to implement various aspects of adult education. □

UNIVERSITY OF DELHI

Advt. No. Estab. IV/51/78 dated 22.4.1978

Applications on the prescribed forms are invited for the following posts:

S. No.	Department	Designation
1.	Faculty of Law:	
	a. Evening Law Centre No. I	One Professor Specialization: Labour Law
	b. Evening Law Centre No. II	One Professor Specialization: Industrial Property Law Patents, Trade and Copy Rights.
	c. Campus Law Centre	One Part-time Lecturer
2.	Faculty of Management Studies	i. Four Professors ii. Two Lecturers.
3.	Education	Two Professors
4.	Modern Indian Languages	i. One Professor of Bengali (Temp. but likely to continue) ii. One Reader in Marathi iii. One Lecturer in Punjabi (Temp. upto 19.1.1979)
5.	Physics & Astrophysics	i. One Professor
6.	Chemistry	ii. Two Readers (one for CAS)
		i. Two Readers ii. One Workshop Technician (Electronics) for CAS (Temp. but likely to continue)
7.	South Delhi Campus	i. One Reader in Political Science ii. One Reader in English (Temp. upto 24.7.1979)
8.	Sanskrit	One Reader (Temp. upto 16.1.1979)
9.	Economics	One Reader (Temp. upto 30.4.1979)
10.	Operational Research	One Lecturer
11.	English	i. One Reader (Temp upto 24.7.1979) ii. Two Lecturers (for P.G. Evening Classes)
12.	Mathematics	One Lecturer (Temp. upto 10.5.1979)
13.	Modern European Languages	i. One Lecturer in Russian (Temp. upto 10.5.1979) ii. Three Senior Technical Assis- tants (one each in Russian, French and German languages)
14.	Hindi	One Lecturer (Temp. upto 9.4.1979)
15.	Sports Council	i. One Assistant Director of Physi- cal Education (Female) ii. One Coach

The Scales of Pay of the posts are

- Professor : Rs. 1500-60-1800-100-
2000-125/2-2500
2. Reader: Rs. 1200-50-1300-60-1900
3. Lecturer: Rs. 700-40-1100-50-1600
4. Part time-Lecturer in Law
Rs. 500/ p.m. (fixed) for work-load
ranging from 3-6 hours per week.
Rs. 750/ p.m. (fixed) for work-load
ranging from 7-10 hours per week.
5. Assistant Director of Physical Edu-
cation (Female) Rs. 700-40-900-EB-
40-1100-50-1300.
6. Coach Rs. 440-15-515-EB-15-560-20-
700-EB-25-750
7. Senior Technical Assistant/Work-
shop Technician: Rs. 550-25-750-EB-
30-900.

All posts (except Part-time Lecturer)
carry D.A., C.C.A. and H.R.A. as

admissible under the rules in force in
the university from time to time.

I. Essential Qualifications for

1. Professorships: A scholar of emi-
nence.

Independent published work of high
standard and experience of teaching
Post-graduate classes and guiding re-
search for a considerable period desir-
able.

2. Readerships: Good academic
record with first or high second class
Master's Degree in the subject concern-
ed with a Doctors Degree or equivalent
published work.

Independent published work (in
addition to the published work men-
tioned above) with atleast 5 year's
teaching experience in Honours/Post-
graduate classes essential.

3. Lecturerships: Good academic re-
cord with first or high second class
Master's Degree or an equivalent degree
of a foreign University in the subject
concerned.

(Note: Second Class would mean
atleast 50% marks in the subject or
equivalent grade.)

Desirable: (i) A Doctor's Degree or
Evidence of Research work of equiva-
lant standard in the subject concerned.
(ii) Teaching experience of Degree/Post-
graduate classes.

Provided if a teacher is not a Ph.D/
M.Phil./M.Litt. at the time of his/her
appointment and does not qualify him-
self/herself for the award of Ph.D./M.
Phil./M.Litt. Degree from a recog-
nised University in a subject which is
being taught by him/her within a period
of five years from the date of his/her
appointment or does not give evidence
of research work within that period in
the subject concerned, he/she shall not
be entitled to any future increments
after the expiry of the said period of
five years till such time he/she fulfils the
above mentioned requirements.

4. Part-time Lectureship in Law

Good academic record with first
or high second class Bachelor's or
Master's Degree in Law, practice at
the Bar for atleast 5 years of which 3
years should have been in the Trial
Courts. Previous teaching experience
desirable but not essential.

(Note: Part-time teachers may be
appointed initially for a period not
exceeding one academic year which
could be renewed after each academic
year with the total tenure of appoint-
ment of an incumbent not exceeding 5
years.)

5. Asstt. Director of Physical Educa- tion (Female).

Master's Degree in Physical Educa-
tion or a Master's Degree in Arts/Sci-
ence with a Post-graduate Diploma in
Physical Education.

6. Coach: (i) Bachelor in Physical
Education or B.A. with Post-graduate
Diploma in Physical Education; (ii)
Diploma in Coaching from N.I.S.,
Patiala.

7. Senior Technical Assistants

(1) Bachelor's Degree (2). Advance
Diploma in Language concerned with
Distinction; (3) Well experience in
handling Audio-Visual aids, knowledge
of script writing and have training in
a recognised language laboratory; (4)
Good knowledge of typing in the langu-
age concerned.

8. Workshop Technician (Electronics)

Diploma in Electronics and equivalent
qualifications.

II. SPECIAL/DESIRABLE QUALIFI- CATION FOR

1. Professorship in Labour Law

Grounding in: (i) Comparative
Labour Law (ii) International Legal
Developments for the protection of
"Workers' Rights" and human rights,

generally, (iii) Labour economics and labour statistics.

2. Professorships in Industrial Property Law

Grounding in (i) Comparative and International Law relating to industrial and intellectual property; (ii) Property Law including succession; (iii) Taxation; (iv) International Trade and economic Law; (v) Law of industrial licensing and "know-how".

Note: In the event of no suitable candidates being available in these fields, the university may make a selection for Professorships in Law in any area without reference to any particular specialization.

3. Professorship in Management Studies

Preference will be given to scholars who have specialization in Production Management, Personnel Management and Industrial Relations, Business and Society, Quantitative methods in management, Communication or Information system.

Experience of teaching through case methods, business games, and other advanced methodology for managerial courses will be desirable. Consultancy and/or Executive experience will be considered as additional qualifications.

4. Lectureships in Management Studies

Master's Degree or an equivalent degree of a foreign university in Business Management, Engineering or Technology with specialization in any one or more of the following areas:

Business Policy, Production, Marketing Management, Financial Management, Materials Management, Computer in Management, Personnel Management.

The candidates having specialization in Financial Management with Chartered Accountancy or Cost Accountancy, will be preferred.

Candidates with consultancy/executive experience or with teaching experience in the Post-graduate programme in Business Management will be given preference.

Familiarity with the case methods of instruction and training in modern methods of instruction in Management will be additional qualifications.

5. Readership in Marathi (MIL)

A sound knowledge of the Theory and Practice of Comparative Literature.

6. Lectureship in Punjabi (MIL)

A sound knowledge of Linguistics and Gurmat.

7. Readerships in Physics

Persons with "Specialization in any branch of Theoretical or Experimental Physics" may apply.

8. Readerships in Chemistry

Specialization in the Inorganic Chemistry.

9. Readership in Sanskrit (Temp.)

Specialization in Darsana.

10. Lectureship in Hindi (Temp.)

Specialization in Journalism and/or Translation.

11. Asstt. Director of Physical Education (Female).

Should have previous administrative experience of organising games and

sports at University level. Proficiency in games upto Inter University and National level.

12. Coach

(i) Competence in Coaching in atleast any two games; (ii) National/International standing in sports; (iii) Two years' coaching experience.

13. Senior Technical Assistants (MEL)

(i) Some experience of handling books in Foreign languages or experience in documentation/publication work; (ii) Good knowledge of typing foreign languages other than that concerned; (iii) Candidates will have to appear in written test in the language concerned.

14. Workshop Technician (Electronics)

Experience of repairing, maintenance and handling of Electronics and other instruments.

The prescribed application form can be had from the Information Office of the university either personally or by sending a self-addressed envelope (size 5"×11") with postage stamps worth Rs. 2.55.

Selected candidates will have to produce the original documents relating to their age, qualifications, experience etc. at the time of interview.

Applications (separate for each post) accompanied by attested copies of Degrees; other certificates, mark-sheets, published research articles, etc. should reach the undersigned not later than 25th May, 1978.

Note

1. It will be open to the university to consider the names of suitable candidates who may not have applied. Relaxation of any of the qualifications may be made in exceptional cases, in respect of all teaching posts on the recommendations of the Selection Committee.
2. Canvassing in any form by or on behalf of the candidates will disqualify.
3. Candidates from outside Delhi for teaching posts, called for interview, will be paid contribution towards travel expenses equivalent to 1½ single Second Class Rail fare.
4. Those who had applied in response to the earlier advertisements for Professorships in Law (E.L.C. Nos. I and II) and part-time Lecturer in Law need not apply again, but in case they have any additional information to supply, they may do so.

REGISTRAR
DELHI UNIVERSITY

DIBRUGARH UNIVERSITY
DIBRUGARH

Advertisement No. 3/78

Applications are invited for the following posts:

- (1) Professor in Commerce-1 post.
- (2) Reader in Commerce-1 post.
- (3) Lecturer in Commerce-2 posts.
- (4) Assistant Engineer-1 post.

(Temporary)

Scale of Pay

Professor: Rs 1500-60-1800-100-2000-125/2-2500/- (Revised)

Reader: Rs 1200-50-1300-60-1900/- (Revised)

Lecturer: Rs 700-40-1100-50-1600/- (Revised)

Asstt. Engineer: Rs 550-40-750-EB-50-1200/- (Revised)

All posts carry usual allowances admissible under the University Rules in force from time to time.

Essential Qualifications

Professor

An eminent scholar with published work of high quality actively engaged in research. Ten year's experience of teaching and/or research. Experience of guiding research at doctoral level.

Reader

Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

At least five years' experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding research work.

Lecturer

(a) Doctor's degree or published work of an equally high standard and (b) Consistently good academic record with First or High Second Class (B+) Master's degree in a relevant subject or an equivalent degree of a foreign university.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent published work is not available or is not considered suitable a person possessing a consistently good academic record (due weightage being given to M. Phil. or equivalent degree or research quality) may be appointed on the condition that he will have to obtain a Doctor's degree or given evidence of published work of equivalent high standard within five years of his appointment failing which he will not be able to earn future increments until he fulfils these requirements.

Asstt. Engineer

A degree in civil engineering with one year's experience in civil construction works. Experience of building township and project works will be preferred. Diploma holders in Civil Engineering at least seven years' experience in Civil construction work in P.W.D./Educational Institutions/Govt or Semi-Govt Organisations may also apply. Age should not be more than 30 years on 31st March, 1978.

Nine copies of application for the post of Professor and seven copies of application for the post of Reader etc. in plain papers giving full bio-data including (1) Name in full (in block

letters) (2) Father's Name (3) Date of birth by Christian era (4) (a) Permanent residence and address (in full) (b) Present address (in full) (5) Present occupation if any and name of employer (6) Present salary drawn (if any) (7) Detailed academic career with mark-sheets and subjects and studies (including Honours) in degree and Post-graduate course from Matriculation/Higher Secondary/High School Leaving Certificate Examination onwards and copies/reprints of research contributions (8) Name and address of two referees not related to the candidate together with an application fee of Rs 5 (Rupees five) by Crossed Indian Postal Order drawn in favour of the Registrar, Dibrugarh University should be sent in an inner sealed cover superscribed "Application for the post of (Name of the post applied for) Advertisement No. 3/78 enclosed in an outer cover addressed to Shri K. Sarmah, Registrar-in-Charge, Dibrugarh University, Dibrugarh to reach him not later than 27th May, 1978.

The number of this advertisement and name of the post applied for must be referred to in the application. Persons in employment should apply through proper channel or with a no objection certificate from the present employer.

Candidates will be required to appear at an interview if and when called for. Candidates called for interview for the post of Professor and Reader will be given actual Train fair only according to the rules of this university.

K. Sarmah
REGISTRAR I/C

THE MAHARAJA SAYAJIRAO
UNIVERSITY OF BARODA
Notification No. 2

Applications are invited for the following posts in the prescribed forms which will be available alongwith the details of qualifications and specialization from the undersigned on prepayment of Rs. 2-00 (Re. 00.50 for members of Scheduled Castes/Scheduled Tribes) by Crossed Indian Postal Order payable to Registrar, M.S. University of Baroda, and a self-addressed envelope of 30 x 12 cms. for each post.

Faculty of Arts—Lecturers in:

(1) Sanskrit (2) English (3) French (4) Russian (5) Gujarati (6) Hindi (7) Marathi (8) Linguistics—two posts (9) Sociology—three posts (10) Persian (11) Archaeology and Ancient History—two posts (12) Library Science.

Faculty of Science—Lecturers in:

(1) Physics (2) Mathematics (3) Microbiology (4) Lecturer/Research Associate in Nutrition (Temporary) (5) Geography.

Faculty of Education and Psychology—Lecturers in:

(1) Education—Two posts (2) Educational Administration.

Faculty of Commerce—Lecturers in:

(1) Accounts—three posts (two at Baroda and one at the Constituent College, Padra) (2) Business Administration (3) Business Economics at the Constituent College, Padra, (4) Commerce at the Constituent College, Padra (5) Banking.

Faculty of Home Science—Lecturer in:

(1) Home Science Education and

extension (Supervisor) (2) Foods and Nutrition—Two posts (3) Clothing and Textiles—two posts (4) Home Management.

Faculty of Technology and Engineering—Lecturers in:

(1) Electrical Engineering—7 posts (2) Applied Mechanics—4 posts (3) Civil Engineering—5 posts (4) Mechanical Engineering—7 posts (5) Electrical/Mechanical Engineering (Part-time Degree course)—2 posts (6) Metallurgical Engineering (7) Textile Chemistry (8) Pharmaceutics (9) Textile Engineering—2 posts (10) Applied Chemistry (11) Business Economics.

Faculty of Law—Lecturer in Law
Centre for Continuing/Adult Education and Community Services:

Lecturers—three posts (Temporary).
Scales: Rs. 700-40-1100-50-1300-
Assessment-50-1600.

The posts carry D.A., H.R.A., C.L.A., and P.F. and Gratuity benefits as per rules.

Those candidates who have applied in response to the Notification No. 9 dated 23-8-1977 and No. 11 dated 18-11-1977 need not apply afresh. In case they have required additional qualifications and/or experience, they should apply afresh.

Although no individual post is reserved for the Scheduled Castes/Scheduled Tribes candidates, the Facultywise reservation is as under:

	SC	ST
Arts	1	3
Science	1	1
Education and Psychology	—	1
Commerce	1	2
Home Science	—	1
Technology and Engineering	3	4
	6	12

Preference will be given to Scheduled Castes/Scheduled Tribes candidates who are considered fit. In the case of Scheduled Castes/Scheduled Tribes candidates interviewed by the Committee, if suitable candidates are not available for appointment to the posts of Lecturers sanctioned by the University Grants Commission in fifth Plan, the Selection Committee may recommend suitable candidates for appointment, as Research Associate/s on Rs. 1,000/- or Rs. 1,200/- or Rs. 1,400/- p.m. net depending upon the merit, for an initial period of three years extendable upto five years. These persons may later on compete for the posts of Lecturers as and when vacancies occur. However, the requirements for the qualifications will not be relaxed.

The applicants at the time of requesting for the prescribed forms should mention very specifically the post for which the forms are required. The Scheduled Castes/Scheduled Tribes candidates will attach a certificate to this effect.

Application forms will be available upto 22-5-1978 and requests received after that date will not be considered.

The application should be accompanied by Crossed Indian Postal Order payable to the Registrar, M.S. Univer-

sity Baroda worth Rs. 8-00 (Rs. 2-00 for members of Scheduled Castes/Scheduled Tribes candidates) on or before 31-5-1978. The candidates if called for interview will have to come at their own expense.

R.A. Dadhwala
DY. REGISTRAR

LUCKNOW UNIVERSITY
Advertisement No. 7/1978

A. Applications are invited from candidates possessing a graduate degree in Medicine included in the Schedules of the Medical Council of India Act, 1956 with a good academic record and postgraduate degree in the subject concerned (M.D./M.S./Ph. D./D. Sc./F.R.C.S./M.R.C.O.G. or equivalent) for the following posts in the K.G. Medical College, Lucknow.

Professors in the Grade of Rs. 1200-50-1500-60-1800 (subject to revision).

1. One Professor of Paediatrics.

Candidates must possess five years' teaching experience in the subject concerned as Reader or in an equivalent post.

Readers in the Grade of Rs. 800-50-1450 (subject to revision) plus Dearness Allowance as Admissible under the Rules.

2. One temporary Reader in Medicine (Nephrology).

3. One temporary Reader in Medicine (Endocrinology).

4. One Reader in Psychiatry.

5. One temporary Reader in E.E.G. in the Department of Psychiatry.

6. One temporary Reader in Thoracic Surgery of Cardio Thoracic Unit of the Department of Surgery.

Candidates must possess three years' teaching experience as Lecturer or in an equivalent post.

Lecturers in the Grade of Rs. 650-30-800-40-1000-50-1300 (subject to revision) + D.A. as Admissible under the rules).

7. One temporary Lecturer in Medicine (Heart Diseases).

8. One temporary Lecturer in Medicine (Neurology).

9. One Lecturer in Surgery.

Candidates must possess three years' teaching experience as Tutor, Registrar, Resident, Demonstrator or in an equivalent post.

B. Applications are also invited from candidates possessing a graduate degree in Dentistry (B.D.S.) or equivalent with a good academic record and post-graduate qualification (M.D.S. or its equivalent) for the following posts in the Dental Wing of the K.G. Medical College, Lucknow.

Professors in the Grade of Rs. 1200-50-1500-60-1800 (subject to revision).

10. One temporary Professor of Dentistry (Oral Surgery).

11. One temporary Professor of Dentistry (Pedodontia).

Candidates must possess five years' teaching experience as Reader or in an equivalent post.

Lecturers in the Grade of Rs. 650-30-800-40-1000-50-1300 (Subject to revision) + D.A. as Admissible under rules).

12. Four temporary Lecturers in Dentistry.

Candidates must possess three years' teaching experience as Tutor, Regis-

trar, Demonstrator or in an equivalent post.

General

For purposes of qualifications required for the above posts, the degree obtained in a subject taught in the Department which subsequently is constituted into a separate Department, shall be deemed to be a degree in the subject concerned, for the newly constituted Department. For posts in sub-specialities, special training and/or experience in the sub-speciality concerned, shall be an additional essential qualification.

Relaxation in the prescribed qualifications may be made in exceptional circumstances in accordance with the ordinances.

No consulting/private practice is allowed but the incumbents will be given 50% of the pay as Non-Practising-Allowance subject to a maximum of Rs. 600/- p.m. on the condition that the total emoluments including the non-practising allowance, will not exceed Rs. 2,700/- per month.

It is not necessary to fill all/any of the advertised posts.

Benefits of Provident Fund available for permanent posts as admissible under the rules, on confirmation. Period of probation for permanent posts is one year.

Applications on the prescribed form (available on request accompanied with a self addressed envelope 10 cm x 13 cm in size, free of cost from the office of the Registrar), with recent testimonials, publications, etc. should reach the Registrar, Lucknow University, Lucknow, by May 22, 1978. Candidates who are in service, must send their applications through proper channel. Application forms to outstations will be issued upto May 13, 1978.

This supersedes all previous advertisements for the above-mentioned posts. All those who may have applied earlier in response to previous advertisements should apply again in response to this advertisement on the terms and conditions regarding private practice given in the advertisement.

**B. N. Singh
REGISTRAR**

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GURU NANAK DEV UNIVERSITY AMRITSAR

Advertisement No. 5/78

Applications are invited for the following posts on prescribed forms obtainable (free of cost) from Office of the Registrar, Guru Nanak Dev University, Amritsar by making written request accompanied by self-addressed stamped envelope of 23 x 10 cms so as to reach this office by 15.5.1978 along with crossed Indian Postal Order(s) for Rs 7.50 for posts at Sr. No. 1 to Sr. No. 6 and Rs 5 for posts at Sr. No. 7 & 8 drawn in favour of Registrar, Guru Nanak Dev University, Amritsar.

Note: Persons already in employment must send their application through their employer.

Grade: (plus allowances as admissible under University rules).

1. Professor of Biology-1 (Rs. 1500-60-1800-100-2000-125/2-2500)
2. Readers in Biology-2 (Rs. 1200-50-

1300-60-1900)

3. Lecturers in Biology-2 (Rs. 700-40-1100-50-1600)
4. Curator (Museum/Herbarium) (Biology) (Rs 400-40-800/50-950)
5. Superintendent Botanical Garden (Rs 400-40-800/50-950)
6. Lecturer in Guru Nanak Studies Department (Rs. 700-40-1100-50-1600)
7. University Research Fellow in Mathematics (Rs. 400 p.m. fixed)
8. Junior Research Fellows (UGC) in (1) Sociology (2) Biology (3) Economics (4) Law (5) Punjabi (Rs. 400 p.m. fixed)

Qualifications

For post at Sr. No. 1

An eminent scholar with published work of high quality and actively engaged in research. Ten years' experience of teaching and/or research. Experience of guiding research at doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

For post at Sr. No. 2

Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

About five years' experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding research work.

For post at Sr. No. 3

(A) A Doctor's degree or research work of an equally high standard; (B) Consistently good academic record with 1st or high 2nd class (B grade in the seven point scale) Master's degree in a relevant subject or an equivalent degree of a foreign university.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of qualifications prescribed in (B) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a consistently good academic record (weightage being given to M. Phil. or equivalent degree or research work of quality) may be appointed provided he/she has done research work for at least two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Explanation

Candidates for being eligible for requirement to the posts of Lecturers must have a 1st or high 2nd class (B grade in the seven point scale) at the Master's level and for determining consistently good record, average of

50-55% may be expected at the two examinations prior to the Master's examination.

Specialisations for posts at Sr. No. 1, 2 & 3
Molecular Biology, Biochemistry, Population/Developmental Genetics, Microbial Genetics/Ecology, Fungal/Vertebrate Biology, Plant Systematics/Ecology, Theoretical Biology or any other area of modern biology.

For post at Sr. No. 4

M.Sc. Zoology/Botany with good academic record and two years research experience in Systematics/Ecology.

For post at Sr. No. 5

M.Sc. Botany with good academic record and two years experience in floristic studies.

For post at Sr. No. 6

(a) A Doctor's degree or research work of an equally high standard; relating to the Syntactical, Semantic or Morphological Study of Guru Granth Sahib; (b) Consistently good academic record with 1st or high 2nd Class (B grade in the seven point scale) Master's degree or equivalent qualification of foreign university in the subject of Punjabi / Hindi/Sanskrit / Religious Studies / Philosophy / Linguistics. (c) Thorough lexical, grammatical and Thematics knowledge of Guru Granth Sahib.

Desirable

(i) Knowledge of Urdu/Persian/Sanskrit. (ii) Experience of translating Gurbani into any Indian or foreign language.

Note: The post is required for the project of the translation of Guru Granth Sahib into Urdu.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a consistently good academic record (weightage being given to M. Phil. or equivalent degree or research work of quality) may be appointed provided he has done research work at least two years or has practical experience in a research Laboratory/Organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increment, until he fulfils these requirements.

Explanation: Candidates for being eligible for requirement to the posts of Lecturers must have a 1st or High 2nd class (B in the seven point scale) at the Master's level and for determining consistently good record, average of 50-55% may be expected at the two examinations prior to the Master's examination. For posts at Sr. No. 7&8:

(i) First or High Second Class Master's degree in the subject concerned with good academic record (ii) Aptitude for research.

**Mohinder Singh Randhawa
REGISTRAR**

A list of Doctoral Theses Accepted by Indian Universities

SOCIAL SCIENCES

Psychology

1. Asthana, Kirti. Some personality correlates of socio-metric status in school going children. University of Saugar.
2. Biswas, Chandidas. Interpersonal relationship in class room situation as reflected on social desirability scale. University of Calcutta.
3. Tripathi, A.D. Personality patterns of high and low adolescent self discloses. Kumaun University.

Sociology

1. Batria, Puran. Sex crimes in District Raipur 1960-70. Ravishankar University.
2. Diwedi, Nandani Prasad. Siddhi zile ke parivartan-sheel Gond: Ek samajshastriya vishleshan (Hindi). Awadhesh Pratap Singh University.
3. Jha, Shanker Kumar. Sociological study of Medieval Mithila with special reference to the study of Brahminical culture. University of Bihar.

Political Science

1. Gangadharan Pillai, V. Administrative problems of state enterprises in Kerala. University of Kerala.
2. Jathkar, Sudhakar Damodar. A study of the role of opposition parties in the IV Lok Sabha. Osmania University.
3. Kar, Baidyanath. Regionalism: Peace and security aspects. University of Calcutta.
4. Mukhopadhyaya, Ratna. Rajtantra ka swarup Ramayan Mahabharat kaleen. (Hindi). Ravishankar University.
5. Pande, Kumud. India's diplomacy in the United Nations, 1959-71. Jawaharlal Nehru University.
6. Salvekar, Madhukar Vasudeo. The administration of Bombay Presidency, 1921-22 to 1947-48. University of Poona.
7. Vijayinder Kumar. Indo-Bangladesh relations. Vikram University.

Economics

1. Chauray, Ishwardutt. India's budgets and budgetary policy 1951-52 to 1976-77. University of Indore.
2. Desai, Ansuya B. Agricultural growth of M.P. after independence. Vikram University.
3. Jain, Shubha Rani. Panchvarshiya yojanaon mein Madhya Pradesh ke Malwa shetra ke adivasi shetra ka arthik vikas (Hindi). Vikram University.
4. Jakaria, Iso. A study in wages and living conditions of agricultural labour in Bundelkhand Region. Awadhesh Pratap Singh University.
5. Mundle, Sudipto. The intersectoral movement of resources between the agricultural and non-agricultural sectors in India. University of Delhi.
6. Ramchandran, T.S. Agricultural development in tribal areas of Madhya Pradesh: A case study of Bastar District. Ravishankar University.
7. Shastri, Chendresh. Human resource development and educational planning in Kumaun during last two decades. Kumaun University.

Education

1. Sali, Vanji Zavaru. Construction and standardization of unit tests in physics for pupils of Standard VIII. University of Poona.

2. Soman, K. Some affective correlates of Mathematics achievements of secondary school students. University of Kerala.

3. Venkateswarlu, Mylavaram. The educational philosophy reflected in the Mahabharata. Andhra University.

Commerce

1. Bhandari, Bhawar Singh. Export promotion schemes in India during the plan period. University of Indore.
2. Bhujanga Rao, Aditham. A statistical study of the population dispersal vis-a-vis the industrial expansion in and around Poona. University of Poona.
3. Devdhar, Vidya Sadanand. A study of the administration and services rendered by the Maharashtra State Electricity Board with special reference to Poona. University of Poona.
4. Jain, Bimal Kumar. Bharat mein vanijyak, banking rin nitiyon ka mulyankan 1951 ke pashchat. (Hindi). University of Saugar.
5. Moltali, Rajendra Laxmanrao. Industrial development of Kolhapur District. Shivaji University.
6. Raman, A. Foreign banks in India: An evaluation of their working and future. University of Saugar.
7. Shitole, Vijaykumar Sidhivinayak. Passengers and goods transport business in Kolhapur city. Shivaji University.
8. Virendra Prasad Singh. Management of housing resources in Greater Bombay: An appraisal of institutional efforts. University of Poona.

Management

1. Davar, Nanabhoy Sohrab. Management education in the Indian economy. University of Poona.
2. Gulati, Krishan Kumar. Sales and distribution of toilet products in North India. University of Delhi.
3. Ram Perakash. Management of inventories in selected public sector undertakings of Central Government. University of Delhi.
4. Sharma, P.S.R.V.K. Prabhakara. Organisation pattern of graphite crucible industry in East Godavari District of Andhra Pradesh. Ravishankar University.

HUMANITIES

Philosophy

1. Chuneekar, Mridula. A critical study of the concepts of Anatta and Samghata with special reference to Buddhism. University of Poona.
2. Kotecha, M.D. A philosophical study: Shri Raman Maharshi. Gujarat University.

Language & Literature

English

1. D'Cruz, Patricia. Aurobindo's theory of poetry. Bangalore University.
2. Shrivastava, Kusum. Arthurian legend in Victorian poetry with particular reference to Tennyson. University of Saugar.
3. Sreenivasan, S. The literary criticism of F.R. Leavis: The doctrine and discipline of a new humanistic ethic. University of Kerala.

Sanskrit

1. Bhattacharyya, Bani. A comparative study of Madhava Kandali and Kirtivasa. Gauhati University.
2. Gupta, Primla. Aryasaptshati aur uska alochanatmak adhyayan. Vikram University.

3. Jagtiani, Maya Rani. Dhatupathon mein arthnirdesh. University of Delhi.

4. Kaushik, Ganesh Singh. Mahakavi Balmiki ka darshnik chintan. Ravishankar University.

5. Mishra, Sreekrishna. Nagesh Bhatt krit vyakaran siddhant laghu manjusha ka vishleshnatmak evam tulnatmak adhyayan. Ravishankar University.

6. Phadke, Asha Purushottam. The Ganaratnamahodadhi of Bardhamana: A critical study with special reference to the first two adhyayas. University of Poona.

7. Sarangi, Alekha Chandra. Development of Sanskrit from Panini to Patanjali: Temporal primary formation. University of Poona.

8. Sharma, Ram Niwas. The religion of Satapatha Brahmana. University of Saugar.

9. Sharma, Rani. Vratas in the Smritis and the Puranas with special reference to Upavasas. University of Delhi.

10. Shivkumar. A study of the Samkhya thought as found in the Brahmanical systems of Indian Philosophy. University of Poona.

11. Shukla, Hira Lal. Dandharanya ke sanskritik prishtbhoomi. D. Litt. Ravishankar University.

12. Shukla, Kedarnath. Alankaron ke tatwik vivechan mein saraswati kanthabharan ke den ka mulyankan. Vikram University.

13. Sneh Lata. A study of Prameya-Pariccheda of Prasthan Ratnakara. University of Delhi.

14. Tripathi, Gadhadhar. Bharatiya darshan mein anatamvad ka vikas: Boddh darshan ke vishesh sandarbh mein. Kanpur University.

Hindi

1. Gupta, Manju. Adhunik Hindi ke pratinidhi mahakavyon ke samajik chetna. University of Delhi.

2. Gupta, Neena. Dr. Ram Kumar Verma: Kavi aur natakkar. University of Delhi.

3. Joshi, Padmakar Vishnu. Hindi mein anuvadit Marathi sahitya granth. University of Poona.

4. Kaushal, Ramchander. Goswami Tulsidas ke sahitya mein vyakt rajniti ka adhyayan. University of Indore.

5. Manohar Lal. Chandrashekhar Bajpai ka kavya. University of Delhi.

6. Mishra, Ram Sewak. Tulsi kavya manyutaon ke adhar per unkee rachna prakirya evam kritiyon ka adhyayan. University of Saugar.

7. Nagaraju, Krishnasastry Nanjangud. Shelley—vaigyanik tatwon ke adhar per Agey ke upanyason ka adhyayan. University of Poona.

8. Nanda, Kiran Kumari. Sant kavya mein vidroh ka swar. University of Delhi.

9. Narender Singh. Hindi laghu upanyas ke shilpvidhi. University of Delhi.

10. Pathak, Vinay Kumar. Chhattisgarhi mein paryukt prinishtith Hindi aur itar bhashaon ke shabdon mein arth parivartan. Ravishankar University.

11. Ramalingom Iyer, V. Humour in medieval human Hindi and Malayalam ties poetry. University of Cochin.

12. Rathore, Nathoo Ram. Hindi Ram kavya ke patron ka tulnatmak adhyayan, pramukh prabandh kavyon ke adhar par. University of Saugar.

13. Sarode, Pitambar Chimanrao. Swatantryottar Hindi upanyason ka rajnitik aur arthik parivesh ke sandarbh mein adhyayan, 1947-72. University of Poona.

14. Saxena, Abha. Hindhi karakon ka bhashavaigyanik adhyayan. University of Delhi.

15. Sharma, Swadesh Bala. Dwivedikaleen kavya ke sanskritik prishtbhoomi. University of Delhi.

16. Siva Rami Reddy, Y. Swatantryottar Hindi-Telugu upanyason mein vyakt garhachetan ka adhyayan. Sri Venkateswara University.

17. Suresh Chandra. Nirala sahitya mein samajik chetana. University of Delhi.

Urdu

1. Ardouin, Robert. A critical study of Carcin de Tassy's histoire de la litterature hindouie et hindoustanie. University of Delhi.

2. Karmadi, F.H. Firaq Gorakhpuri: Life and works. Shivaji University.

3. Khan, Aneque-Ur-Rehman. Maolana Abdul Majid Darayabadi: Hayat-o-Khidmat. Nagpur University.

Bengali

1. Bandyopadhyay, Jayantakumar. Bengal samalochanarup-o dhara from Bankim to Rabindranath i.e. from 1872-1930. University of Calcutta.

2. Biswas, Ardhendu. Bangla upanyase tiryak dristi: Bangabasi gosthir tin lekhake. Rabindra Bharati University.

3. Chattopadhyay, Bhabananda. Linguistic study of Hooghly District Sadar Sub divisional Bengali. University of Calcutta.

Marathi

1. Kabir, Md. Humayun. Descriptive analysis of Sandvipi in its socio-cultural context.

2. Patil, Saudamini Laxmanrao. N.H. Apte yancha vangmaycha chkitsik abhyas. University of Poona.

3. Patil, Susheela Baliramji. Gyaneshwaritun prateet Honare gyandevanche vyaktimatv. Nagpur University.

4. Shaligram, Tryambak. Shri Gyaneshwarancha panth-raj kundalini yog: Swarup ani vivechan. University of Poona.

Gujarati

1. Mehta, Dipak. Avarchin Gujarati kavitaon pranaya nirupan. Sardar Patel University.

Malayalam

1. Sarojini Amma, S. Grammar of Bhasha kautaliyam. University of Kerala.

Kannada

1. Totad, Shankar Basappa. Kannada sahityadalli veeras. Karnatak University.

Telugu

1. Charya, K. Sampatkumara. Traditional school in modern Telugu criticism. Kakatiya University.

Fine Arts

1. Joshi, Srikrishna. Ujjayani ke lok chitrakala: Maratha yug se adhunik yug tak. (Hindi). Vikram University.

Geography

1. Das, Pannalal. The land capability study of the Kalia Ghai River Basin. University of Calcutta.

2. Manager Prasad. The changing pattern of land use in Bodh Gaya Block (Gaya). Magadh University.

History

1. Desouza, Teotónio Rosario. Goa in the 17th century: Socio-economic history. University of Poona.

2. Gupta, Gyan Prakash. Mughalkaleen Bundelkhand san 1554 se 1707 tak. (Hindi). Awadhesh Pratap Singh University.

3. Sivaraman, K.S. Early British land revenue administration in Bombay Deccan, 1818 to 1864. University of Poona.

4. Thomas, Pappy Kuzhuvelil. Archaeozoological aspects of the prehistoric culture of Western India. University of Poona.

A list of select articles culled from Periodicals received in AIU Library during April, 1978

EDUCATIONAL PHILOSOPHY

Frakel, Charles. "Academy enshrouded". *Change* 9(12); Dec 77: 24-9, 64.

Weaver, Toby. "What is the good of higher education"? *Higher Education Review* 8(3); Summer 76: 3-14.

EDUCATIONAL PSYCHOLOGY

Bushway, Ann and Nash, William R. "School cheating behaviour". *Review of Educational Research* 47(4); Fall 77: 623-32.

Mink, Oscar G. "Creating a growth-oriented learning environment". *New Directions for Higher Education* (20); Winter 77: 77-92.

Slavin, Robert E. "Classroom reward structure: An analytical and practical review". *Review of Educational Research* 47 (4); Fall 77: 633-50.

EDUCATIONAL SOCIOLOGY

Coldwell, Roger. "University seminars: Status friction as a deterrent to communication". *Higher Education Review* 8(3); Summer 76: 57-61.

Midgley, Simon. "Money not the root of brain drain from developing countries". *Times Higher Education Supplement* (330); 3 Mar 78: 6.

"PROFESSIONS AND the universities: The Darwin colloquium-1". *Times Higher Education Supplement* (331); 10 Mar 78: 15.

"PROFESSIONS AND the universities: The Darwin colloquium-2". *Times Higher Education Supplement* (332); 17 Mar 78: 12-13.

"PROFESSIONS AND the universities: The Darwin colloquium-3". *Times Higher Education Supplement* (333); 24 Mar 78: 10-11.

EDUCATIONAL PLANNING

Carter, Charles. "Motto for 1980s—never play it safe: Is the steady state university to be a fixture?" *Times Higher Education Supplement* (332); 17 Mar 78: 15.

"DEVELOPMENT OF higher education in India: A policy frame of the UGG". *University News* 16(5); 1 Mar 78: 792-9.

"HIGHER EDUCATION into the 1990s". *Times Higher Education Supplement* (330); 3 Mar 78: 7.

Nalapatt, Monu. "Learning by living". *Youth Times* 6(26); 17-30 Mar 78: 14-15.

EDUCATIONAL ADMINISTRATION

Bogue, E. Grady. "Administrative malpractice: The limits of common sense". *Educational Record* 59(1); Winter 78: 77-86.

Doyle, Peter and Lynch, James E. "University management in a changing environment". *Higher Education Review* 8(3); Summer 76: 15-28.

Saunders, Charles B. "How to keep the government from playing the featured role". *Educational Record* 59(1); Winter 78: 61-9.

CURRICULUM

Barnabas, Manorma. "Designing education for tomorrow's woman: Curricular aspects". *New Frontiers in Education* 8(1); Jan-Mar 78: 27-41.

CURRICULUM FOR the ten year school: Major recommendations of the Ishwarbhai Patel Review Committee". *New Frontiers in Higher Education* 8(1); Jan-Mar 78: 84-8.

Spann, Milton G. Building a developmental education pro-

gramme". *New Directions for Higher Education* (20); Winter 77: 23-40.

EDUCATIONAL RESEARCH

Magoon A. Jon. "Constructivist approaches in educational research". *Review of Educational Research* 47 (4); Fall 77: 651-93.

PROFESSIONAL EDUCATION

"FARM VARSITIES Convention held at Anand". *University News* 16(5); 1 Mar 78: 802-4.

Gaur, K.D. "Legal education in a changed context" *Journal of the Bar Council of India* 7(1); Jan-Mar 78: 90-7.

Markose, A.T. "Legal education". *Journal of the Bar Council of India* 7(1); Jan-Mar 78: 20-34.

Tope, T.K. "Legal education—what should be the admission stage for law courses". *Journal of the Bar Council of India* 7(1); Mar 78: 16-19.

ADULT EDUCATION

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UNIVERSITY OF COCHIN

Ad. No. A2. 66/78.

Tripunithura
21.4.1978

Notification

Applications are invited from qualified persons for appointment to the following vacancies in the teaching posts of the University:

Department	Name of post	No. of vacancy	Area of Specialisation
1. Applied Economics	Professor	1	Applied Economics
	Reader	2	Applied Economics
2. Marine Sciences	Professor	1	Marine Geology
	Reader	1	Meteorology
	Lecturer	2	Meteorology
3. Polymer Science & Rubber Technology	Professor	1	Polymer Science
	Reader	2	Plastic Technology—1 Rubber Technology—1
	Lecturer	2	Plastic Technology—1 Rubber Processing Technology—1
4. Ship Technology	Lecturer	2	Material Science—1 Solid Mechanics—1
5. Mathematics & Statistics	Professor	1	Applied Mathematics
	Lecturer	2	Applied Mathematics

Prescribed forms in quadruplicate can be had from the Registrar, University of Cochin, Cochin Palace P.O., Tripunithura-682301, on payment of Rs. 5/- by Cash or Money Order specifying the purpose in the Money Order Coupon. If a person intends to apply for more than one post, application in quadruplicate for each post should be submitted separately. The posts for which the application forms are required, should be specifically indicated in the Money Order Coupon. The receipt of remittance should be attached to the requisition for the forms.

Scale of Pay

(a) Professor: Rs. 1200-50-1650/50-2-1750.

(b) Reader: Rs. 850-50-1350-50/2-1450.

(c) Lecturer: Rs. 600-40-800-50-1100-50/2-1250.

The details of qualification, age, registration fee etc. of each post can be had from the University Office along with the application forms. Those who are in service should forward their applications through proper channel. Candidates will have to appear for interview if called for, at their own cost.

Completed application should reach the University Office on or before 22nd May, 1978.

Appointments to the posts notified will be made strictly in accordance with the Section 6(2) of the Cochin University Act 1971 (Act 30 of 1971).

If no candidate is found suitable for appointment to a particular post, the candidates would be considered for appointment on the lower grade, against the post advertised for.

Note: Candidates from abroad with Doctorate in the concerned subjects with publications of high standard and sufficient teaching experience at postgraduate level may apply by giving their biodata in plain paper, to the Registrar, University of Cochin, Hill Palace P.O., Tripunithura, Kerala, together with a Bank

Draft/Postal Order for Rs. 25/- or Rs. 15/- towards registration fee for Professor/Reader and Lecturer respectively.

REGISTRAR

* * *

JAWAHARLAL NEHRU
UNIVERSITY

Advertisement No. Admn. I/2/1978

Applications are invited from the Indian National for the following posts in the University in the pay scale shown against each plus usual allowances.

1. Executive Engineer (Elect.)—Rs. 1100-50-1600.
2. Deputy Finance Officer—Rs. 1100-50-1600.

Qualifications and Experience
For Post No. 1:

Graduate in Electrical or Electrical and Mechanical Engineering or recognised University or equivalent qualifications recognized by the Institute of Engineers (India) with 10 years practical experience on the lines of the job requirements.

Job requirements

Design, estimation, construction and maintenance of high and low tension system installations, air-conditioning, heating and cooling systems, pumping systems. Knowledge of maintenance and extension of Rax/Pax telephone systems, PA systems, stage lighting, electric lifts, emergency generators and stabilisers. Ability to prepare tender documents and specifications independently, supervision during execution and maintenance.

For Post No. 2

- (a) A good Bachelor's degree preferably in Commerce.
- (b) Candidates should have qualified in an appropriate accounts examination of Government, or a Local authority or a recognised institute.
- (c) Experience of accounts including pre-audit work and Finance for 15 years of which not less than 10 years' service should be in a supervisory capacity in a

Government organisation or a University or a Public undertaking.

- (d) Experience of Internal Audit and knowledge of performance budgeting.

It will be open to the University to consider names of suitable candidates who may not have applied. Relaxation in any of the qualifications may be made in favour of candidates with considerable professional competence. A higher starting pay may be granted to a highly qualified candidate. Benefits of CGHS and C.P. Fund-cum-Gratuity/G.P. Fund - cum - Pension-cum-Gratuity are available as per University rules.

Both ways second class (Mail) rail fare is payable to the candidates invited to appear for interview from outside Delhi by the shortest route subject to production of rail receipt.

Persons already in employment should route their applications through proper channel.

Applications, in duplicate, on plain paper giving full particulars of the date of birth, educational qualifications, professional experience, emoluments drawn etc. together with attested copies of testimonials should reach the Deputy Registrar (ADMN), Jawaharlal Nehru University, New Mehrauli Road, New Delhi-110057 latest by 22nd May, 1978.

* * *

SOUTH GUJARAT UNIVERSITY
University Campus, Udhna-Magdala
Road, Post Box No. 49,
Surat-395007

Applications are invited in the prescribed form (in eight copies) for the following posts in the Post-Graduate Department of Chemistry of the University:

One Professor

Qualified in Physical, Organic/Inorganic Chemistry with deep research interest in Dyestuff Chemistry and Chemistry of Drugs.

One Reader

Qualified in Theoretical Chemistry.

Pay Scales are as under:

1. Professor
Rs. 1500-60-1800-100-2000-125/2-2500.
2. Reader
Rs. 1200-50 - 1300-60-1600 - Assessment-60-1900.

In addition to pay, the teachers of the University Departments are entitled to draw dearness allowance, House Rent Allowance and other benefits like contributory Provident Fund and gratuity as may be decided from time to time by the university.

Information about the qualifications prescribed for the above posts and the prescribed application forms can be had on payment of Rs. 7/- in cash or by Postal Order in favour of the Registrar, South Gujarat University, Surat with self addressed envelope of 23cm. x 13cm. size duly stamped with Re. 0.50 ps. The last date for receipt of the application is 15.5.1978.

G.A. Desai
REGISTRAR

University news

A CHRONICLE OF HIGHER EDUCATION & RESEARCH MAY 16, 1978 80 PAISE



Prof. K. T. Chandy, Chairman, National Productivity Council, congratulating the recipient of a Gold Medal at the convocation of the Indian Institute of Management, Bangalore. Looking on are Mr. Govind Narain, Governor of Karnataka and Mr. N S. Ramaswamy, Director of the Institute.

JAWAHARLAL NEHRU UNIVERSITY

Announcement of Faculty Positions in the School of Life Sciences

Advt. No. Aca. III/4/78

The School of Life Sciences has openings for faculty positions in the following areas of specialization:

I. Professors/Senior Fellows

(i) Photobiology (ii) Plant Physiology (iii) Radiation Genetics/Genetics Toxicology (iv) Molecular Biology/Biochemistry (v) Behavioural Sciences/Neurobiology

II. Associate Professors, Fellows

(i) Animal Physiology/Neurobiology (ii) Animal Developmental Biology (iii) Immunobiology

III. Assistant Professors / Associate Fellows

(i) Biophysics (ii) Microbiology (iii) Biometrics

Position and Scale of Pay

Professor/Senior Fellow

Rs. 1500-60-1800-100-2000-125/2-2500

Associate Professor/Fellow

Rs. 1200-50-1300-60-1900

Assistant Professor/Associate Fellow

Rs. 700-40-1100-50-1600

(Plus usual allowances as admissible to the members of the staff in the Central Universities.)

ESSENTIAL QUALIFICATIONS

Professor/Senior Fellow

Consistently good academic record with at least a high 2nd class Master's degree in the relevant discipline or an equivalent qualification from an Indian/Foreign University. A doctor's degree or published work of an equally high standard; and about ten years' experience of teaching and/or research in the interdisciplinary area.

Associate Professor/Fellow

Consistently good academic record with at least a high 2nd class Master's degree in the relevant discipline or its equivalent qualification from an Indian/Foreign University. A doctor's degree or published work of an equally high standard; and about five years' experience of teaching and/or research in the interdisciplinary area.

Assistant Professor

Consistently good academic record with at least a high 2nd class Master's degree in the relevant discipline or its equivalent qualification from an Indian/Foreign University; and a doctor's degree or published work of an equally high standard.

Associate Fellow

Consistently good academic record with at least a high 2nd class Master's degree in the relevant discipline or its equivalent qualification from an Indian/Foreign University; and some teaching and/or research experience.

Relaxation in any of the qualifications may be made (a) in favour of persons of eminence or of high academic professional distinction, and (b) in exceptional cases where adequately qualified persons are not available but are otherwise found suitable for the respective positions. It will also be open to the University

to consider the names of suitable candidates who may not have applied.

The selected candidates will be expected to participate in the teaching and research programmes in the concerned disciplines in other schools of the University as well as in the programmes offered in their own School.

Normally appointment of Fellows and Associate Fellows is made on contract basis for a period ranging from one to three years.

Benefits of C.P. Fund-cum-Gratuity/G. P. Fund-cum-Pension-cum-Gratuity are available as per University rules.

Persons already in employment should route their applications through proper channel.

Due consideration will be given to candidates belonging to SC/ST at the level of Assistant Professor/Associate Fellow.

Second class (mail) rail fare (both ways) will be paid to candidates invited to appear for interview from outstation by the shortest route subject to the production of rail receipt.

Applications, separate for each post, on the prescribed form, obtainable free of cost from the University by sending a self-addressed and stamped envelope of 23cm. x 10cm. size to the DEPUTY REGISTRAR (ACADEMIC), Jawaharlal Nehru University, New Mehrauli Road, New Delhi-110057 should reach him latest by 31st May, 1978.

Candidates from abroad, applying for faculty positions, may apply on plain paper, (but their applications should reach the University by the last date) furnishing all the relevant information such as their names; date and place of birth; marital status; nationality; state of domicile; postal and permanent addresses; father's name and address; academic and professional attainments; full details of (a) publica-

tions, and (b) research projects undertaken; language(s) known; details of visits to foreign countries; and the names and addresses of at least two persons well acquainted with the candidates professional work who should also be requested by the candidate to forward to the DEPUTY REGISTRAR (ACADEMIC) confidential report concerning the candidate.

* * *

ALIGARH MUSLIM UNIVERSITY

Advertisement No. 4/78-79

Applications, on the prescribed form, are invited for the following post.

Professor of Physics, in the Department of Physics. Scale Rs. 1500-60-1800-100-2000-125/2-2500 plus allowances.

Qualifications

A first or a high second class Master's Degree in the subject concerned of an Indian University or equivalent foreign qualifications; (b) A research degree of a doctorate standard or published work of a high standard; and (c) At least ten years experience of teaching postgraduate classes and guiding research.

Desirable

Specialization in experimental High Energy Physics.

Prescribed application forms and instructions may be had from the Deputy Registrar (Executive) either personally or by sending a self-addressed envelope of 23 x 10 cm. Last date for receipt of applications is 28th May 1978. Incomplete applications and those received late may not be considered.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T.A. equal to one single second class Railway fare only.

**Jamalur Rahman
REGISTRAR**

THE UNIVERSITY OF KASHMIR, SRINAGAR

Notice

Applications in the prescribed form are invited for the following posts which should reach the undersigned by or before 1.6.1978.

S. No.	Department	Reader	Posts	Lecturer
1.	Mathematics	1		—
2.	Persian	1 (Temp)		1
3.	Education	—		1
4.	Library Science	—		1 (temporary but likely to become permanent).

Candidates who have applied in response to our advertisement notice of even number dated 9.2.1978 need not apply again.

The prescribed application forms can be had from the Registrar, University of Kashmir, Srinagar on cash payment of Rs. 6/- or by sending a crossed postal order drawn in favour of the Registrar cashable at Srinagar post office along with a self addressed envelope (5" x 11") with the necessary postage stamps.

The details in respect of essential and desirable qualifications for the Post can be had from the office of the undersigned.

**Saif-ud-Din Soz
REGISTRAR**

**No. F.10 (App-Gen) KU/78
Dated 4.5.1978**

UNIVERSITY NEWS

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Hony. Editor : ANJNI KUMAR

Universities and Adult Education

R. Jayagopal

Hitherto relative high priority has not been accorded to literacy programmes in the framework of economic development. The University Grants Commission's most recent guidelines on University participation in National Adult Education Programme is self-explanatory. The activities of universities should include organisation of educational programme, including literacy for illiterate adult, to enable them to play a self-reliant and active role in their own development and in the development of their environment.

The time has come when universities must be prepared to extend its concern for society around it. The continuing education for formal students at the university/college usually should include experiences outside the formal class and his curricular realm. One of the prime responsibilities of a university is to organise itself to serve the adult learner in society. Universities cannot afford to isolate themselves from the rest of the community, since it is supported by the community. They should involve themselves in extension activity. Here the CSS volunteers can do a lot.

In this connection, special attention could be given to women's education. The education programme for adult women may include a wide variety of areas which have a specific bearing on the role of women in family, life. Some of these areas are listed as follows: Human economics, health education (in relation to material and child health), nutrition for the family, civic education, social education, social welfare and family planning.

The institutions of higher education in India could be classified into four broad categories:

- (1) Urban universities and urban educational complexes.
- (2) Rural universities like Gandhigram Rural University,
- (3) Technological universities, and
- (4) Agricultural universities.

The role of each category outlined should be distinct and their contribution could be unique. Urban universities can contribute to the development of urban slums and other weaker sections located in the metropolitan area. Similarly the students and faculty of the rural universities, as the name indicates should be involved in functional literacy, political, cultural, social and economic aspects of development. The role of technological universities could be one of very crucial in the transfer of varied technologies to the rural population. The sphere of agricultural universities is already well defined as to their involvement through extension activities among farmers.

The Madras University's plan in this regard pertains to 3,500 villages and 165 affiliated colleges. Each college department would adopt 2 villages each year and in five years would cover 1000.

[Courtesy : The Hindu]

Research and Teaching in Higher Education

M. N. Sharma*

The function of a university is to create and universalize knowledge. The creation of knowledge demands research; its universalization calls for teaching. There cannot be two opinions about the importance of both in a university. But how can each receive its due?

Prior to independence the universities occupied themselves mostly with teaching. Research came to acquire greater importance after the dawn of independence. The University Grants Commission played a notable part in the process. Institutes of Advanced Studies were set up. Provision has been made for teachers to go on as many as three years' leave on full pay to enable them to conduct research. Substitute teachers work in their place during this period. Preference is given to M. Phils and Ph. D's in the selection of teachers. In interviews a teacher is judged not in terms of the results of his classes, not in terms of the seminars, discussions and debates conducted for students, in short, not in terms of his contribution to the development of his students, but in terms of the books and papers he has published and the conferences he has attended. In sum, he is judged as an author and not as a teacher. Such being the incentive, it is no wonder that the teacher devotes most of his time and energy to writing for publication and attending conferences. If he is not a Ph.D., his first concern after joining the college or the university is to seek an influential supervisor and lose himself in research for the first four or five years of his service. All this naturally undermines teaching which requires full-time attention not only for acquiring grasp and clarity of concepts of the wide-ranging material to be imparted at postgraduate and undergraduate level but also for attending to the individual academic problems of about 100 or 150 students taught by the teacher in a college and even in a residential university of long standing. If the teacher devotes himself to these problems in a manner even remotely approximating to the ideal, he can hardly have any time and energy left for the rat race of research which has become a fashion these days.

Incidentally, the publication-craze and the proliferation of Ph.D's have harmed research as well. If research really means a discovery which can be placed before the world at large in any field of knowledge, it calls for undistracted, sustained effort for a period which cannot, in most cases, be bound within two to

five years. One has, at first, to equip himself with hundreds of angles of approach by going through the wide-ranging general material in the subject or branch of which the topic under research is a part. He has to explore all the material which has been developed in India as well as abroad on the topic itself. Then alone he can find out—and this finding out involves a good deal of thinking and effort—either a new approach to the topic or some new application of some existing approach or approaches. He has to work in far-flung libraries in the country and spend additional money and months and years together to obtain material from foreign countries and carry on correspondence with the scholars there. It is doubtful in the extreme if a teacher who should hardly have any time and energy left to himself after teaching in the proper way, can find time to complete all this work even within two to five years. Even apart from the distraction of teaching, the time-bound and degree-bound research has additional scope for being fake by the very procedure for its evaluation. The genuineness of research can be established only after it has been published or has passed the scrutiny of some internationally established scholar of the topic or sub-topic investigated. It is open to serious doubt whether the two or three examiners appointed for its evaluation, even in one case out of ten, have really such status.

What, then, should be done to restore both research and teaching to their proper place? Organisationally, there should be separate wings for research and teaching in a university so that the teachers and the researchers may do full justice to their respective jobs. No doubt, the contemplative and analytical spirit of research is to permeate teaching and learning but the clarity of concept and the wide knowledge of the subject gained with the long experience of teaching can give the young researchers also a solid grounding for the approach to their problems. This can be secured more thoroughly than under the present hotch-potch dispensation of the researcher dominating the teacher if the teachers of long standing in the teaching wing and the colleges deliver periodical lectures to the scholars in the research wing while the guides and even scholars of the research wing periodically acquaint the students and the teachers with their approach and findings. This will be an arrangement far better than the present one in which genuine teaching as well as genuine research is nobody's child, in which those who have flown to high positions on the wings of degree-bound and time-bound research rule the roast.

The salary scales and posts in both the wings should be the same. This is necessary because genuine teaching and genuine research involve equal application of mind and labour. This will also hold in check the temptation to shift from one wing to the other. Appointments to higher posts in each wing should be made on the basis of the applicant's attainments and experience in the specific work required in each wing. It is our belief that organisation of universities along these lines will pave the way for better teaching as well as research. □

*Editor, *News & Views*, Meerut University.

Exams : Self-defeating in aims and objectives

Satya Pal Julka*

A general feeling of dissatisfaction with the question set in our current examination papers, a need for reforms in the direction of questions of better quality and of varied types, are some of the conclusions that can be drawn from a survey conducted over a large population of university teachers of humanities and social sciences, drawn from various universities of the country.

The teachers were requested to answer a questionnaire with a built-in flexibility for a personal touch. Interestingly there are two voices treating any examinations or testing in any form whatsoever as 'kill joy' and deserving of banishment from the process of teaching and learning. The plea for banishment may be a stylised idiosyncratic demand, but about reforms there can be no two opinions.

Practically all the teachers think that the present day question papers lay sole emphasis on easy type questions. This not only leads to subjectivity in evaluation and marking but also proves to be self-defeating in its aims and objectives. While laying claims to test the examinees' power of expression, the questions soon tend to become stock questions only a few in number, and the examinees, by and large, resort to cramming and rote-learning. Some of the teachers are also of the opinion that certain sincere examinees, honestly aiming at displaying their power of writing by attempting answers on their own, prove to be a dismal failure by committing grammatical errors losing cohesion over a long stretch of writing.

While resounding to the question of how they are able to circumvent their propensity to subjectivity in evaluation and marking, in the given situation, the teachers have mentioned their sense of honesty, sincerity of purpose and joint meetings to evolve criteria in cases where the answer books are distributed over two or more examiners. Of course, a majority of them does not have an iota of doubt about objectivity in evaluation as the basic goal to aspire for. However, five teachers have taken subjectivity as the privilege of an examiner, one of them going to the extent of pointing out that he can award high marks even when pleased with just one sentence in an essay type answer.

One of the ways of achieving the goal of objec-

jectivity in evaluation, mentioned by 80 per cent of the teachers, is to reform the type of questions set in the current examination papers. All of them have expressed themselves in favour of retaining essay type questions to test the abilities of expression, but making them only a part of the question paper and not the whole of it.

A question paper, it has been suggested, should include a variety of question types:

(i) Essay type (Traditional, possibly with built-in criteria of evaluation).

(ii) Short-answer type (To be answered in 50-200 words).

(iii) Simple type (To be answered in a sentence or a phrase, or a word).

(iv) Objective type (To be answered by selecting the right answer out of given choices).

However, at least 25 per cent of the teachers have expressed themselves against objective type questions in humanities and social sciences.

There seems to be no common ground on what the teachers expect of the learners to show as an overt demonstration that they have learnt what the teachers have tried to teach them. The only point of convergence is that the learners should be active, should ask questions and should be able to answer questions orally and in writing. Hence the importance of questions and their quality.

Whereas some of the teachers think that whatever is teachable is also testable and their main concern in teaching is with that most of them have treated enjoyment as an essential component of teaching—learning process which seems to be beyond testing, or at least objective type testing.

All of them do not go to the extent of treating testing as 'kill-joy' to be banished from the process of teaching and learning, but certainly make a plea for the component of joy and enjoyment to exist as an integral part of the process. Perhaps more thought has to be given to the 'affective' component of learning and lessening of load on mere written tests, by inducing continuous assessment.

*Zakir Hussain College, Delhi University.

Text Books and Higher Learning System

S. C. Bhalla*

R. S. Dabas

“Text books and their channelization system through open book market, text book libraries/sections, book banks and study centres, so as to reach the users, have been studied. Particular emphasis has been given to text books services in academic libraries system through case studies. Some additional components necessary for redesigning have been pointed. Systematic and analytical approach to go deeper into the problem is suggested.”

Introduction

In the system of text books and higher learning, the input to the system is in the form of untrained students. In the system there are three component units, i.e. students teachers and text books as learning materials. There is an interaction among these 3 components and the output is learning, acquisition of knowledge or some other academic achievement.

A system is a set of two or more elements of any kind. It is not an ultimate indivisible element but a whole that can be divided into parts. The elements of the set and the set of elements have the following three properties:

- (i) The properties of behaviour or each element in the set has an effect on the properties or behaviour of the set as a whole.
- (ii) The properties and behaviour of each element and the way they affect the whole depends on the properties and behaviour of at least one other element in a set. Therefore, no part has an independent effect on the whole and each is affected by at least one other part.
- (iii) The elements cannot be organized into independent subgroups but they interact.

A system viewed structurally is a divisible whole; but viewed functionally it is an indivisible whole in a sense that some of its essential properties are lost in taking it apart.

Preoccupations with systems bring with it the synthetic mode of thinking. In the analytical mode an explanation of a whole is derived from explanations of its parts. In synthetic thinking something to be explained is viewed as a part of a larger system and is explained in terms of its role in that larger whole. The *synthetic mode of thought*, when applied to systems problems is called the systems approach. The

systems performance depends upon interactions rather than actions.

As in learning process, there is an interaction among the students, teachers and learning material, it can be viewed as a system.

According to Webster's New World Dictionary, a text book is "a book giving instructions in the principles of a subject of study". A text book may be any volume which is a required reading to meet the course requirements. It is generally suited to the syllabus and course objectives at a particular level. The matter presented provides a systematic growth of the subject, continuity and integrity from chapter to chapter.

Higher learning as considered here represents academic achievement—theoretical, vocational or professional beyond Higher Secondary level. It may be general, i.e. B.A., B.Sc., M.A., M.Sc. etc., or professional, i.e. B.E. M.B.B.S., B.V.Sc. or BArch etc. The institutions of higher learning may be colleges, universities or professional bodies.

Objectives of the study

- (a) To analyse the text-books and higher learning system.
- (b) To study the users and text books channelization system,
- (c) To examine the existing state of text books in Academic (University & College) Library sub-systems.
- (d) To study inadequate and various additional components of the system for redesigning.

Text Books and Higher Learning System: Analysis

The educational process is an interaction of student, teacher and learning materials. Learning materials may be General books, Text-books, Reports and Journals etc, and in the nonbook form, may be pro-

*Former Bibliographical Assistant, AIU.

jected aids-film strips, films, videotapes and non-projected aids, i.e. charts, diagrams, magnetic board displays working models and static models.

Text books are universally accepted educational resources of students in the classroom and outside. As the text-books are written according to the syllabus or course contents and in simple and illustrative style, students find it convenient to use them as the bases of their study. Students concretise their mental artifacts by revising the subject outside the classroom.

Apart from students, text-books are required by members of teaching staff, specially by those teachers who are required to teach a course outside their field of specialization. They also play a very pertinent role in teaching inter-disciplinary subjects. A single text book may or may not fulfil the requirements; so a number of text books are prescribed.

In libraries text books have been found to be very useful to the reference librarians because of their excellent bibliographical citations and lists of further readings.

There is a substantial increase in the price of text books owing to various factors and it is beyond the reach of an average student to purchase all the text books. One can purchase one or two books and turn for the remaining needs to some other additional sources. The following section deals with this problem.

2. Users' and Text Books Channelization System

2.1 Open Market Book Trade :—Out of the multi-channels through which the text books are made available to the users, one of the major channels is open market whether it is local, national or international. Increased cost of production of text books has compelled the government to make them available to an average student at subsidized rates. There are some other programmes also with the same objective :

- (i) Indo-American text book programme
- (ii) E.L.B.S. programme
- (iii) Indo-Soviet programme

Sometimes this channel is choked because of the non availability of the text books, sometimes the channel remains unutilized because of the lack of purchasing power of students. Therefore other sources are tapped to satisfy the requirements.

2.2 Libraries:—Text Book Libraries/ Text Book Sections

Years ago it was thought that the primary basic material should be purchased by students/teachers and only the extra needs are to be supplemented by the libraries. As the dependence on the libraries is growing day by day libraries of the institutions of higher learning cannot escape the impact of text books as learning materials.

2.2(i) Academic libraries

A. University libraries as Institutes of Higher Learning

University libraries, by nature of their establishment and objectives, have to cater to

the divergent needs of its users. Apart from research materials it has to provide basic reading material essential to understand the subject. Text books also have a respectable place in the library collection. Libraries may serve through a channel of specialized text-book libraries, text book sections, extension centres and regional centres. In university library system, departmental libraries also provide access to text books essential for the courses offered by it. Resources may be allocated proportionately from the total funds available to the university library.

B. College libraries as Institutes of Higher Learning

College libraries have very limited resources. There is a considerable difference of opinion among the library administrators and members of faculty regarding the purchase of text-books as library collection. The obsolescence value is always made the index to disfavour the purchase of text books. Moreover, it is presumed that text books are to be purchased by students themselves. But these factors don't render text books unsuitable for purchase by the college libraries.

The classical laws of library science, propounded by Dr S.R. Ranganathan, also lay responsibility on the college libraries, in the maxim 'Right book to the right reader at the right time'. If the college library goes on collecting scholarly works, in which only a few teachers and students are interested, then it will not be serving its purpose. In due course of time the library will lose all the relevance to a major segment of its readers. It is expected of the college libraries to meet the requirements of students at the undergraduate levels and in some cases at the post-graduate levels. Research needs should be shouldered by the university libraries. There is a marked need to evolve a policy regarding the purchase of text books in college libraries, allocating handsome proportion of their budget.

2.3 Book Banks : Book banks are the drain pipes to make text books available to the users. The idea of book banks existed in a vague form in colleges as a feature of the college welfare societies. Generally college welfare societies made a provision for poor students for a full set of text books in all the subjects, issued to them for the full academic year of study pursued by them. It allotted some funds for the purchase of sets of books at different levels. This concept developed in the shape of book banks in colleges and university libraries in the present situation. Some financial assistance to colleges for the development of libraries, with the special purpose of making available to deserving students books on loan for a period of study, is provided by the Govt. In the last few years considerable

stress has been laid by the Govt. on this. This may be called establishment of book banks in the college libraries.

2.4 Study Centres: The other channel to supply the text books to students is of recent origin, the establishment of study centres equipped with multiple copies of text books in towns and cities having a large population of students, engaged in higher education. These centres may act as regional centres for the area in which they are located. These centres may be set up at places where there is a concentration of colleges. Each study centre should have its area demarcated and the students of all the colleges in that area should have access to these facilities.

3. Existing State of Text Books in the Academic Library Sub-System

Let us now confine ourselves to only one channel for further spadework. i.e. Academic libraries. Only text book services aspect has been taken up here. Here we would like to mention some case studies; first, that of the library of I.I.T., Delhi based on the Annual report published by the Institution and obviously as reported by the librarian; second, that of students and what they say regarding library facilities with particular reference to text books service. This is based on the data collected for the project "Socio-economic profile of Delhi University Students, by the Research Cell in Economics of Education, Association of Indian Universities; and third, that of the analysis of the data as mentioned in the annual report of University of Delhi, 1975-76, regarding the Delhi University Library System.

Case Study—I

According to the Annual Report published by the institute, the following are the statistics of I.I.T., Delhi Library for the year 1975-76.

Statistics of I.I.T. Delhi Library 1975-76

Issue and return	Main counter	Text book counter
For a year	117,040	69816
Per day	220	95

From this it can be safely inferred that text books form a notable segment of issue and return. The ratio works out to be 2:1, i.e., after every two books issued at the main counter, one book is a text book issued by a text book counter. The above mentioned statistics can have a different interpretation if the number of text books and the total number of other books present in the library is available. Their stock ratio shall have the impact on the issue and return data and consequently on the inferences.

The increased interest in the text book services in the library is evident from the following data

regarding the reservations made for books at two circulation counters.

Reservation Statistics I.I.T., Delhi Library 1975-76

Reservations	Main counter	Text book counter
Reservation received	720	879
No. Reserved	670	851

From the statistics given in the above table it is clearly indicated that students' inclination is more towards text books. The reservation number is more in the case of text books. The demand and supply could not equate each other as the demand was more.

This leads to the inference that inspite of all the negative points in the case of text books multiplication and/or increasing the number of text books in regular collection, they deserve more attention to be paid to them.

Case Study—II

The data collected for the study undertaken by Dr. G.D. Sharma, Association of Indian Universities for Socio-economic profile of Delhi University students has been used here. 82 students at the post-graduate and higher levels were interviewed. Their views regarding the library services are analysed here with particular reference to text books services in the libraries.

From the statistics as given in the tables, I to IV (pages 938-39) only 42% students comment that the library facilities are adequate and 58% opt for inadequate. 82% mentioned that text book facilities are inadequate and if we analyse by faculty, i.e. Natural Sciences, Social Sciences and Humanities the inadequacy comes out to be 91%, 78% and 60% respectively. This indicates that substantial percentage of students reported text book inadequacy. The above data have been analysed separately from the point of view of library services in relation to 4 variables as mentioned in the tables.

The inference drawn from the data is that even at the post-graduate and higher levels the text book facilities are inadequate. There is a decreasing trend regarding the inadequacy as reported by the students of faculty of Natural Sciences, Social Sciences and Humanities. Natural sciences students rated highest inadequacy. This leads to the conclusion that these disciplines require more attention as compared to social sciences and humanities and consequently need more improvement. There is greater demand of text books at the undergraduate level, so it would be appropriate to study the position in the undergraduate text book libraries also.

Case Study—III

This analysis relates to the statistical data of Delhi University library system for 1976. (Table V given on p. 939) In the central library the book circulation per student is 11.25 in undergraduate text book

library (UGTB) Shahdara and 26 in UGTB, Greater Kailash.

The book consultation per student in the central library is 13, 35 and 40 respectively, in the UGTB Shahdara and Greater Kailash.

The above analysis shows, the trend is quite a bit in favour of Text Book Services. As in the central library, only 11 books were issued and 13 were consulted per student but in the case of Text-Book libraries per student circulation consultation is more than double. In the case of South Delhi Campus where text book collection is also quite large, the circulation/consultation per student exceeded all of them i.e. it comes to 26/77 respectively. (Table VI given on p. 939)

From the three case studies it is evident that there exists a problem in relation to text books in the present academic library system. There is greater need to analyse the problem intensively.

4. Study of inadequacy and various additional components for system's redesigning

We have analysed the present situation of text book channelization in the preceding section. The existing situation can be improved by collecting the statistics in various fields and also by taking into consideration study regarding various other environmental components. To mention a few:

4.1 Study of socio-economic background of student of a given institute

Socio-economic profile of students shall be the index to the extent to which the text book facilities should be provided. There are certain colleges in which students belonging to upper level of income group take admission. These students can afford to purchase the required number of text books. If the students themselves can purchase the text books, the funds may be diverted to some other head to render other facilities. It requires further investigation.

4.2 Study of enrolment trend

Study regarding enrolment in different facilities shall help to formulate the policy as to how many multiple copies should be purchased in a given subject field. This will vary from faculty to faculty. So this is also one variable on which the allocation of funds may depend. It is expected that study of this factor shall prove beneficial to the text book library services.

4.3 Survey of text-books in different disciplines

This component requires coordination between librarians with the faculty/Head of the Deptt. Both of them may survey that in a specific subject what the number of text books is and which one of the available are essential. This also varies from subject to subject and it is an important factor to judge the proportion of funds to be allocated to the faculty/department.

4.4 Average cost of a text-book

Average cost of a text book is also one important factor in the library system. While allocating funds for various disciplines, this criteria should be given proper weightage. There are certain disciplines in which the average cost of a text book is quite high as compared to others. The price of a text book in arts may be lower as compared to science and technology. This should be linked with the subsidised programmes.

4.5 Study in increasing resources

When the sets of text books are issued to the students from the book banks or from the text books library a nominal sum, say of Rs 3 to 5 per book, may be charged as the rental charges towards the books borrowed by them. This will increase the library units and generate the sources for the purpose of text books. The statistics regarding students availing book bank facilities also plays an important part, while calculating other modes of text book services.

4.6 Increase in the no. of text book library/sections and their services

In the case of universities the departmental libraries may function as text book libraries. Books may be issued for full term. But there must be some solution to the present situation in which while appearing for the exams, students have to take library clearance. That means they have to deposit their borrowed books at the peak point when they should have them. Therefore, some alternative arrangement should be made so that the students may return the books after their exams. Some arrangement can be made between college/university authorities and librarians to see that the books are compulsorily returned after the exam. When the exams are over the books are not required by the students and they can be easily returned. In the present situation the admission ticket is issued only after getting the clearance from the library. Similarly the certificates could be awarded only after getting the clearance from the libraries. The institutions which have a semester system, this problem shall accrue to a lesser extent i.e. only once after the final semester. This factor needs rationalization. However this will help the student at the proper time.

4.7 Study centres

Facilities regarding study centres may be looked into with deeper insight. The areas study centre can quench the thirst of text books and can also supplement the needs of voracious readers. A relationship between text book libraries (academic libraries) and study centres may be worked out to have balanced services. Areas study centre should be the nearest source from where text books can be taken. Of course area centres may not be able to issue two sets but certainly can help the students to a large extent. These areas centres can also have a link with the administrative authorities of educational institutes for a smooth functioning.

4.8 Student's assistance

To reduce the costs of services, students assistance may be sought. There are some routine jobs which can be performed by sincere and needy students after some briefing. This provided additional manpower. This factor can be investigated further by isolating the library operations which may be handled by them.

4.9 Library cooperation: Inter Library loan services

At present inter library loan services are more of personalized type rather than institutional. By 'insti-

tutional' it is meant that there should be some mutual agreement of all the libraries to share the resources in every form rather than making a personal influence to have the required material. There is a need for a design of operational code of conduct for inter-library loan services.

So, it will not be wrong to think that this sub-system requires an analytical and systematic search to help the students at all academic levels in relation to text book services and learning process. This preliminary treatment is insufficient to provide any basic policy suggestion but only a pointer towards the insufficiency.

Table I

Library facilities as evaluated by students, postgraduates and above, University of Delhi

Types of facilities enquired	Adequate		Inadequate	
	No. of students	%age	No. of students	%age
1. Over all response	32	42.31	45	57.69
2. Text Books	—	—	37	82.22
3. Reference Books	—	—	26	57.78
4. Lending facilities	—	—	31	68.89
5. Reading Room facilities	—	—	17	37.78

Note: No. of students taken in the sample—82

No. of students with no response—5

No. of students reporting adequate services—32

No. of students reporting inadequate services—45

Source: Statistics based on the data collected for Socio-Economic Profile of Delhi University Students.

Table II

Library facilities as evaluated by students, postgraduates and above, by faculty, University of Delhi

FACULTY OF SCIENCES

	Adequate		Inadequate	
	No. of students	%age	No. of students	%age
1. Over all response	8	42.11	11	57.89
2. Text Book	—	—	10	90.91
3. Reading Book	—	—	6	54.55
4. Lending facilities	—	—	6	54.55
5. Reading Room	—	—	5	45.45

Note: Total number of respondents in faculty of sciences—19

Table III
FACULTY OF SOCIAL SCIENCES

	Adequate		Inadequate	
	No. of students	%age	No. of students	%age
1. Overall response	14	37.84	23	62.12
2. Text book	—	—	18	78.26
3. Reading book	—	—	11	47.83
4. Lending facilities	—	—	19	82.61
5. Reading Room	—	—	9	39.13

Note: Total number of respondents in the faculty of Social Science—37

Table IV
FACULTY OF HUMANITIES

	Adequate		Inadequate	
	No. of students	%age	No. of students	%age
1. Overall response	11	42.31	15	57.69
2. Text book	—	—	9	60.00
3. Reading book	—	—	9	60.00
4. Lending facilities	—	—	6	40.00
5. Reading Room	—	—	3	20.00

Note: Total number of respondents in the faculty of Humanities—26.

Table V
Statistical Data of Delhi University Library System for 1976

Constituent Unit	Membership	Book Circulation	Book Consultation
1. Central Ref. Library	14,066	1,54,920	1,84,000
2. South Campus Library	1,120	28,720	86,679
3. UGTB Shahdara	3,630	1,26,120	1,26,500
4. UGTB Greater Kailash	4,606	1,21,200	1,85,350

University of Delhi, 54th Annual Report, Vol. 1, pp. 41, 1976.

Table VI
Per Student Circulation/Consultation Delhi University Library System, 1975-76

Service Unit	Per student circulation	Per student consultation
1. Central Ref. Library	11	13
2. South Campus Library	26	77
3. UGTB Shahdara	35	35
4. UGTB Greater Kailash	26	40

Prof. Chandy addresses convocation at IIM, Bangalore

Addressing the third annual convocation of the Indian Institute of Management, Bangalore, Professor K. T. Chandy, Chairman of the National Productivity Council, said that management was a function not a status. He warned that other nations would march ahead, if "our managers unconsciously atrophy and become mere seekers of status."

He said: "In our country we can be too conscious of status and of the privileges that go with it, and progressively, we may lose sight of the contents and the basic purpose of the managerial function. Already in this world of ours there is so much of disparity, among different segments of our own society, and an equally stag-

has to come from the intellectuals, and, above all, from the managerial group whose function is not only to perceive rightly but to perform correctly. We cannot hope for a world free from contending philosophies and conflicting interests. The leadership function consists not in wishing for the absence of these but in steering organised activities through these conflicts of views and interests towards a more egalitarian society within our country and among the nations of the world."

Professor Chandy, who is also the Chairman of the Kerala State Industrial Development Corporation, said they were apt to associate efficient management with large enterprise in the industrial

tion with all others for achieving total growth.

"We have to make management training a regular component of our educational programmes for every profession. The development of teaching material and faculty for carrying out this transformation of our educational effort is urgent. Your Institute can and should play its part in the accomplishment of this task," he added.

Referring to the talk of a socialistic-oriented economy, Professor Chandy asked, "Do we take this seriously? Have we analysed the implications of the foundations of managerial authority in a socialist economy? Have we understood the functions of trade unions and the kind of work-ethics which management and labour should have in a socialistic economy? Have we plotted the stages by which we can move forward to a socialistic economy?"

In the absence of clarity, they were apt to run into chaos and seek remedies through emergency measures. The emergency was an ever-present one in the sense that they had no overwhelming national consensus about their work-ethics and the directions in which they should go. Management of enterprises and the faculty of educational institutions had to address themselves to those value systems that would enable them to bring in a new world. Techniques were not enough. At one time, the desire to win independence and to develop the competence to run their own institutions was sufficient. Now they had to build innumerable new institutions and constantly adapt their culture and style of work to an emerging egalitarian world. The appropriate value system had to be not only understood intellectually but had to become a part of their motivation.

Professor Chandy said that the unity of the country had to be an article of faith with all, not merely for making ritualistic statements but for the purpose of operational activity. He continued: "We seek regional development to reinforce the unity of our country. The development of backward sections of our community and

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gering and growing disparity among nations in their economic wellbeing. It should be our constant endeavour to reduce this disparity. Efforts to reduce disparities carry with them new challenges and the continuous revaluation of our functions and values."

Pointing out that mighty forces were at work within the country challenging the established managerial structure and the foundations of managerial authority, Professor Chandy said: "We cannot and should not stem the tide of change, for the world will not accept inequitable disparities.

Social harmony is a pre-condition for economic progress and the achievement of social harmony cannot be on a static frame. The leadership required for bringing about necessary changes, which would achieve social harmony,

field, because that was where the leaders initially felt the urgent need of improvement. However, a new consciousness had now come in the society and they now saw the need to improve managerial functions in an organised effort, whatever be the scale of operation, because the small units collectively made a large contribution to growth and wellbeing.

He congratulated the Management Institute for recognising the importance of the managerial functions, irrespective of scales and sectors. What was needed was a total effort everywhere. It was true that teaching and training methods would have to adapt themselves to the operations of different scales and cultures. It was for the faculty to devise curricula and training methods appropriate to sectors and scales of operations and work in co-opera-

backward areas have also to be pursued for reinforcing the unity of our country. Narrow loyalties are the inheritance of history. It may be said that the loyalties which are described as narrow cover wide regions and large sections of our population and, consequently, they are not narrow. However, in the larger context of India as a whole these are narrow, be they based on language or region."

The managers had to transcend the inherited narrow loyalties and their search was for reduction in disparities in order to create and maintain the unity of the country. It was not easy to transcend their sectarian loyalties unless they constantly reminded themselves of the need to build unity. Therefore, justice had to be the framework and merit judged in terms of not only intellectual ability but willingness to be of service to the country as a whole.

The country had come through many vicissitudes and as a people they were far more cohesive now than they were at the dawn of independence, but the task remained. When they talked about the Centre-State relationship, of special allocation of resources to regions and segments of the community, they had to bear this in mind. Decentralisation within institutions and within the country was a means of ensuring unity. It also presupposed that there was a Centre which was empowered to guide and preserve the integrity of the country.

What would be the future of India and of the world by the turn of the century? Continued survey of technological and sociological changes taking place around them and heavy investment in making these studies were urgent tasks in order to enable them to move in the right direction with the rest of the world. Institutes were not meant only for training against the background of the present but for searching out the factors of change and assessing their impact on their lives. Their value system comprising of democracy, socialism and secularism had to be the basis on which they had to deal with the changing

world. There was no place for elitism or complacency.

In his report, Mr N. S. Ramaswamy, Director of the Institute, said the first achievement of significance was that they had assembled, within four years, a brilliant band of 90 professionals drawn from disciplines such as economics and sociology and functions such as production, finance and marketing and sectors such as agriculture, transport, power, habitat and health. "I do not think there are many institutions in India and abroad who have under one umbrella such a multi-disciplinary, multi-functional and multi-sectoral faculty. Here we have a unique experiment and I can only hope that we will devise organisational systems which will sustain this experiment," he added.

The most important programme of the Institute, Mr Ramaswamy pointed out, was the two-year post-graduate diploma in management. The first two batches had already been employed in industry and the feedback was generally good. In the third batch, passing out now, they had introduced a course on transportation. For the fourth batch in position, the intake had been raised from 60 to 120. They had introduced

a social project besides the traditional industry-attachment project. In these projects, the students tackled problems in the slums, hospitals, rural areas and the non-organised sector whereby they would get an appreciation of the agony of underprivileged communities and backward sections in society.

The fifth batch, which was coming in this year, would have specialisation streams in agriculture and rural development, transportation and power management, and habitat and human settlements management. This was the first time that courses in utilities were being offered in the country.

The Director said that 12 officers of the Tamilnadu Government were receiving their special diploma in management training at the convocation. They belonged to the departments of agriculture, irrigation, power and transportation. This was the first time a State Government had taken the bold step of developing management teachers for such sectors. The Institute was now discussing with the Kerala Government for a collaboration in running such programmes for the technical personnel of that State.

Cultural changes in Indian society

Before 1947, till we won independence, there was an accent on patriotism in all our behaviour patterns. The pace was set in Bengal. There was a marked preference for one's own language, for one's own way of dressing. Such things somewhat lost relevance after our getting independence. The self-assertion against a foreign rule was not needed. There could be seen a mass switching over to the Western dress style among men, for example. Paradoxically enough, it helped self-assertion in a different manner in the newer context. The so-called backward people could affirm equality at least in outward appearance, by donning

the Western type of dress, which was all to the good. There have been changes in women's dress style also, but the saree seems to hold its own and may well survive this century and even for a longer period.

The use of the dinning table is also becoming so common, that young people in urban areas might not even be aware of the earlier way of squatting on the ground for meals. The drawing rooms of the affluent and the *nouveau riche* are cluttered, all over the country, with a variety of ugly pieces of furniture worth millions and millions of rupees.

Such changes are understand-

able, they are inevitable, in a vast country like ours, where the tendency to absorb foreign influences has never abated.

Take a country like Japan. A foreign visitor would find that there were two cultures co-existing in Japan. A man steps out of his house dressed in the Western fashion and works all day in an office run on western lines. But, as he returns home, he changes the shoes and dress for wooden sandals and a kimono. He squats on the mat-floor. The two cultures are kept meticulously apart and both are followed in their pristine purity.

It is possible for a small country, having a strong tradition, to follow such a course. But a sub-continent like ours, having a variety of living patterns, is bound to be assimilative and its choice is likely to be eclectic. Indians absorb things, often changing them in the process. It is possible to see somebody sitting cross-legged on a dining chair and another going about in a suit and a Gandhi or any other type of cap.

The cultural landscape in India would appear confusing to a

foreigner. It would be a rewarding exercise to observe the contours emerging in the recent past.

Our getting independence synchronised with the world shrinking into one world, say into a global village. This accounts for certain similar features emerging all over the planet. The airports, five-star hotels, conference rooms are similar wherever one goes. The movement towards sameness in dress, work-habits etc. has not a little to do with the fact of the world getting smaller. However, as a visitor to a foreign land gets out of the hotel and goes out of the city, he sees the dissimilarities, the things that separate the culture of the country from his own.

A culture has something, which is universal, which it shares with other cultures. But it has something or many a thing which distinguishes it from them. All cultures are individuations, have separate identities even as they must share a certain universal characteristic. What distinguishing features of Indian culture are discernible today?

India evinced an inexhaustible resourcefulness during the whole of the nineteenth and first half of the twentieth century by throwing up a galaxy of great men. There was a tremendous challenge to her survival. The response was also no less significant. When India was lying prostrate under a foreign rule, her multi-splendoured soul vindicated itself. Now that she is physically freed of bondage what is it that distinguishes her from others? Is she just caught up in the sheer struggle for survival? Can one perceive any scintillating soul-energy in her broad life-rhythms, in her artistic creations?

To take the latter first, one finds that in the creative field there is discernible a sort of second awakening, an awakening into a one-world consciousness, resulting in an aspiration to be judged in the world context. The art of pointing affords more easily an opportunity to use a global idiom. Some work by Indian artists seems to catch up with the mainstream of the post-modern international art-creations. Even so, art which would be embedded into the Indian milieu would have



Prof. Uma Shankar Joshi, President, Sahitya Academy, delivering the convocation address at Sri Venkateswara University

a validity of its own. I saw a painting of the cyclone which recently hit Andhra Pradesh,—a man lying dead on the sea-shore. The land, the sea, the sky presented the elements. It was elements versus man. A lamb near the man's body was the only sign of life. Nothing could be more frail. Perhaps the lamb was just a symbol. One would be reminded of the Christ's parting words to the disciples that they would find themselves as lambs in the midst of wolves. The lamb-symbol would hint at not only the physical but spiritual survival of man.

Sculpture also is in the same predicament as painting is in.

One thing that one feels happy about architecture is that there is an explosion of talent in this field. And yet there is an uneasy feeling that it is, by and large, yet to come to its own. Look at some of our University campuses. They are turning themselves into museums of various styles or modes of architecture. One is also left guessing whether proper attention to climatic variations is paid in adopting or adapting Western models.

As far as Indian music and dance are concerned, they seem to hold their own, not only at home but abroad also. One hears though, of late, that after the initial liking of the Beatniks and others for the *Sitar*, there is a waning of interest. In the field of dance, newer and newer talents are making a mark and may be it will go on winning the attention of foreign audiences also in spite of, or perhaps because of, its exotic nature and certainly because of its perfection, achieved in the Indian traditional way.

It is a very difficult and much too hazardous a task to talk about the literary creations, because of the multiplicity of languages. I am reminded of what Octavio Paz says about the state of literature in Spain a hundred years ago. A writer arriving, then, from South America told the Spanish writers: You do not write, you *translate*. What he meant was that the Spanish were just imitating the French. While we do need to translate masterpieces from the

Western—as well as our own—languages, we have to be careful about the other type of translating work—i.e., just writing like the Western writers, without the thing having been worked out or experienced on our own nerves. Paz also suggests that the recent *avant garde* movements peter out into an indistinguishable plethora of petty things, and therefore fail to make a dent. Paz adds that the present day imitation of the moderns has had a sterilizing effect.

The regional novel fared well for a time during the post-independence period, but it stopped progressing somewhere and it suffers from a certain limitation also. I was looking at the form-wise break-up of the Sahitya Akademi award-winning books, 290 to-date, and was, let me confess, shocked at finding among them only nine works of drama, a rare and exacting art. May be, literature will take some time to arrive at the take off point.

The culture of a country includes over and above aesthetic activity, economic and political institutions, social customs and traditions, the world of ideas, beliefs and religion and language.

Language poses a major problem in our present-day culture and sometimes creates an explosive situation. The increasing interest in using one's own language for articulating a variety of intellectual and social needs is a step in the right direction. The use of two languages as link languages, and a desire to scrupulously avoid the inflicting of any language on anybody should contribute to a smooth running of public affairs. A point that deserves attention is about the ruling elite. Whatever the language of administration, there is always a body of clever men who just acquire the ingenuity of wielding it in a smart manner and with them unfortunately that is often the end of the matter. The alienation of the ruling elite from the common people poses quite a formidable cultural problem, and has to be always kept in mind while dealing with the language-situation.

India is a land of many reli-

gions. While it pins its faith on secularism, it does not aim at coming in the way of any section of people following any religion. This does not rule out the inculcation of a spirit of inquiry—a scientific temper. Religion and science are not necessarily mutually exclusive. A scientist of the stature of Einstein avers that religion without science is lame and science without religion is blind. During the emergency period, some highly placed persons took to task scientists who showed any deference to religion, choosing Nehruji's birthday for the attack. Quite a few others joined the chorus. It was, to say the least, an ugly gesture. This is not to say that religiosity, superstition, and the stinking stagnation under the shadow of gods need not be exposed and remedied.

The greatest threat to Indian society is the continuation of injustice to the weaker sections, to the Harijans in particular. It is an irony that independence with its general elections has fortified the caste-system. If one looked around for some saving grace, it might be the fact that a family in India perhaps more than in any other industrialized part of the world, includes more persons than just a husband, a wife and their children.

While more than a half of Indians live under the poverty line, there is no gainsaying the fact that the common people seem to be politically quite mature. This they have proved time and again. One has only to look to the outcome of the 1977 general elections and the recent elections to the legislatures. The common people are illiterate but not uncultured. Gandhiji said, 'In the case of Indian villager an age-old culture is hidden, under an encrustment of crudeness.' The rural population has shown mature political understanding and courage, while the elitist sections of society were found wanting. The elitist sections have evolved a lifestyle and being addicts of it, they have lost the capacity to risk it. Courage is

(Continued on page 953)

Proliferation of Colleges

Prof. Satish Chandra, Chairman of the University Grants Commission, called for a moratorium for three to five years on the establishment of new colleges and universities to prevent, what he called the dangerous proliferation of non-viable and sub-standard colleges in the country. He was delivering the Dr. John Matthai Endowment Lectures under the auspices of University of Kerala at Trivandrum. Prof. Satish Chandra pointed out that unplanned and mushroom growth of colleges created a crisis of confidence among students. These unplanned colleges were mostly of low standard. They were economically weak and hence unable to provide adequate facilities for the students. Academically they could not do justice

brought within the reach of poor but talented children. The idea of "lead colleges" was to choose two or three colleges in a district, depending on its sizes and population, which could be developed to provide quality education. The UGC Chairman, disclosed that the aim was to select by 1980 five hundred "lead colleges". Then another 300 colleges would be brought into the category of autonomous colleges.

Explaining the concept of autonomous colleges, the UGC Chairman said the idea was to develop them first as good colleges and later into mini-universities so that the pressure of setting up new, expensive and non-viable universities could be reduced.

Another innovation, which the

change in the study pattern should begin from the elementary stage itself. The syllabi should be modified so that the student would be linked closely with the problem of the community. Teachers as well as students should be conditioned to do community service and then only would education become meaningful, Prof. Satish Chandra said.

Prof. Satish Chandra suggested that specially designed part-time course would have to be developed so that these children could catch up with others in the regular stream. The UGC chief said the school timing and vacations should be suitably altered especially to suit the children in the rural or mountainous areas. Similarly the mid-day meal system should be expanded to enhance the holding power of the schools.

Stressing the need to improve the facilities for education for the weaker sections, Prof. Satish Chandra said quality schools should be opened at the district or block level and that these schools should be combined with bursaries for the poor but talented children.

A massive programme of adult education was another point highlighted by the UGC Chairman. He agreed that the organisation, inter-linkages and financing of such a programme posed big problems. These were so complex that the Government alone could not solve them. In this respect, the universities could play a vital role.

Prof. Satish Chandra said that neither education nor culture could be the property of a small privileged minority nor could education or culture be developed in a highly segmented society. A mass culture implied mass education.

Referring to the scene of primary and secondary education the UGC chief said in India the objective of free primary education to all between the ages of 6-14 is one of the directive principles of the Constitution. Failure to realise this objective during the last 30 years despite a massive annual expenditure of Rs 25,000 million, 600,000 elementary schools

CAMPUS NEWS

to the students. This sorry state of affairs irked the students because they were the ultimate sufferers. The frustration of students therefore erupted into protests, Prof. Satish Chandra added.

It was to arrest this tendency that bold decision had to be taken to effect a moratorium on new colleges and universities. Of course, he said, exception to this could be made in specified circumstances such as the proven needs of a backward region or section. At the same time, he said, a survey should be conducted to identify those backward regions either by the State Government or by universities.

Prof. Satish Chandra pointed out that the UGC had been advising the universities to conduct a survey of the existing colleges taking the district as a unit. In this connection, he mentioned the UGC programme for the establishment of "lead colleges" so that quality education could be

UGC planned to introduce, was to extend the college science improvement programme and the college humanities and social science improvement programme to another 500 colleges. Thus out of the 6,300 arts, science and commerce colleges, about 1,200 quality institutions could be set up within a five-year period, he hoped.

Prof. Satish Chandra referred to the unrest in universities and that hardly any of the agitations was aimed at raising the educational standards, or effecting meaningful changes in the education system. "For some time, the colleges and universities have been hitting the headlines not for any achievements but as storm-centres of protests and demonstrations", he remarked.

Advocating a thorough change in the present system of education, he said there should be a commitment to social change. This

and 3.5 million teachers and 100 million students is a matter of serious concern and we can hardly move towards mass culture in a country where the literacy rate is only 35 per cent with 100 million illiterates in the crucial age group of 15-35.

In a situation of limited resources, he said, "non-formal education and massive programme of adult education have been put forward as key concepts". Non-formal education would imply considerable flexibility and diversification in the existing system, part-time education and use of non-professional teachers.

Prof. Satish Chandra observed that "all political parties and groups are committed to an egalitarian society, removal of disparities and abolition of poverty. But differences arise when it comes to implementing these noble ideas or the fixing of priorities".

One of the dilemmas of modern political life in a parliamentary democracy, he said, was that radical slogans were sometimes being used as a cover for innate and deep-seated conservatism. "A variant of this is to try to pin the entire responsibility for social change on the educational system in our country, and the UCG has tried to play its role in effecting much-needed changes.

"However, it is necessary to underline that education also reflects the social system, that it is a subject of the existing economic, social and political system. In other words, the educational system cannot operate in an autonomous manner, without simultaneous changes in other spheres of life"

He felt education should shoulder a considerable responsibility in creating a climate for social change and many changes "are needed to gear up the educational system to discharge responsibility".

Andhra VCs discuss their problems with Minister

The conference of the Vice-Chancellors of Universities in Andhra Pradesh was held in Hyderabad recently to discuss

issues pertaining to higher education. The Education Minister Mr B. Venkatram said that he had full exchange of views with the Vice-Chancellors and discussed with them the urgent need for maintenance of peace on the university campuses, restoration of norms of democracy in the universities, selective admission of students to full time institutions, restructuring of courses at undergraduate level to make them more relevant and significant particularly to local environment and rural realities, improvement of postgraduate facilities and provision of unit courses at that level to encourage flexibility of communication and inter-disciplinary approach, common cadres for teaching and non-teaching staff and periodical assessment of the performance of university teachers. He said that another meeting of the Vice-Chancellors would be held soon in which the Chancellor and the Governor, Mrs Sharda Mukherjee and the Chief Minister, Dr M. Channa Reddy, would also participate in the discussions. He said that he would hold discussions with the representatives of the teaching and student communities before the implementation of the decisions of the conference. Those who were present at the meeting included the Vice-Chancellors of Andhra, Nagarjuna, Sri Venkateswara, Osmania, Kakatiya Universities and Agricultural University, Central University of Hyderabad and Anantapur postgraduate centre. The Education Minister promised to discuss with the University Grants Commission and the Union Education Minister the financial assistance for Kakatiya and Nagarjuna Universities which have not so far received any grant from the University Grants Commission.

Kashmir to implement Tyabji Committee recommendations

The Kashmir University authorities have taken steps to implement the recommendations of Badru-ud-din Tyabji Committee which was set up by the State Government in collaboration with the University Grants Commission in October 1976 to suggest ways

and means of improving the university's academic standards.

On the receipt of this report the university has set up four committees to suggest concrete steps in the light of the Tyabji Committee relating to changes in the University Act of 1969, modification of syllabi and evaluation and revision of the structure of affiliation of colleges to the university. These four committees have been asked to submit their proposals within three months so that a new set up would be brought into being at the earliest opportunity.

The committee has recommended well defined service regulations for teachers. It has suggested that the University Act, 1969 should be abridged to include only those clauses which are essential. It has been decided to form a committee comprising two Vice-Chancellors from Kashmir and Jammu Universities, two Registrars and the Commissioner for Education to consider the report of the committee to suggest measures to change the present Act. The final report of the high level committee regarding changes in the university rules will then be submitted to the State Legislature.

Courses in defence studies and computer science accepted by Madras University

The Syndicate of Madras University has authorised granting of affiliation to the Defence Services Staff College, Wellington, for the institution of MSc course in Defence Studies. It has also endorsed the decision of the Tamil Nadu Government and the University Grants Commission to grant autonomy for three more colleges, namely, St. Joseph's College, Tiruchi, Avinashilingam Home Science College, Coimbatore and Regional Engineering College, Tiruchi. With this the total number of autonomous colleges will be eight in the Madras University area.

Dr Malcolm S. Adisesiah, Vice-Chancellor of the university announced after the meeting of the Senate the establishment of computer facilities in the univer-

sity at a cost of rupees sixty lakhs to rupees eightyfive lakhs and the institution of MSc course in computer science. A National Institute of Polymer Science and Technology would also be started in the A.C. College. In the same campus the science museum would also be set up, the master plan for which has already been prepared. The building would cost rupees fifteen lakhs. A sum of rupees seventy lakhs would come from the UGC, CSIR and the State Government for science exhibits.

The Senate also approved the Government's proposal to start the process of transforming the Presidency College into an Institute for Postgraduate Studies and Research from the next academic session. This would mean shedding of eight undergraduate courses and these would be transferred to Dr Ambedkar College, Vvasarpadi, Arts College, Nandanam and the Quaid-e-Millet College for Women, Anna Salai.

On the basis of the recommendation of its languages commission, the Syndicate called upon the Vice-Chancellor to draw up a phased programme for raising the ratio between Tamil and English medium at the undergraduate level to 50 : 50 during the Sixth Plan period. The State Government was requested to give priority to Tamil medium graduates in the matter of employment.

PU strengthens Faridkot centre

The Punjabi University Syndicate at its meeting held recently in Patiala decided to start the teaching of law classes at Faridkot. It was decided to set up at Faridkot a centre for preparing candidates for Punjab Civil Service examinations as well as its regional office. The Syndicate also decided to set up a centre to train candidates for IAS examinations at the university campus in addition to the centre already functioning at the campus in this regard for those belonging to Scheduled caste. The university will seek the State Government's sanction for the new academic ventures. The university's regional office at Faridkot will cater to the

needs of the students of Faridkot and Bhatinda.

The Syndicate also awarded a cash prize of Rs 5,000 to Mr Tirath Singh, a temporary lecturer, for doing supervisory duty courageously at Punjabi University examination centre in Government College, Faridkot. He had detected a case of unfair means at the examination centre under trying circumstances for which he was later assaulted with a sharp edged weapon by some miscreants.

Seminar on quantitative methods for decision-making

A three-day Seminar on Quantitative Methods for Decision-Making sponsored by the University Grants Commission was held in the Department of Statistics, Calcutta University during March 27-29, 1978. Besides teachers and research scholars of the host department, 40 participants representing ten universities and their constituent colleges, two institutes of technology and four research organisations, attended the Seminar. In the inaugural session, Prof. G. Kallianpur, Director, Indian Statistical Institute, Calcutta, spoke on recursive estimation with reference to telemetric data on satellite movements. Prof. P.K. Bose, Director of the Seminar, outlined different decision situations and corresponding optimality criteria. In the first session on 'Subjective Probabilities and Bayesian Decisions' 7 papers were presented. Prof. A.R. Roy, Head of the Department of Statistics, Lucknow University, presided. 'Stochastic Models and Decision-Making' was the subject for discussion in the second session wherein ten speakers participated. Prof. H.K. Nandi of the host department took the chair. In the third session on "Other Decision Procedures and their Applications" Prof. S.M. Sinha, Head, Department of Operational Research, University of Delhi and Dr A. Ghosal, Scientist, Council of Scientific and Industrial Research, New Delhi, presided over the morning and afternoon parts of the session respectively. Seven papers were discussed in the session.

Personal

1. Mr Morarji Desai, Prime Minister of India, was unanimously elected Acharya (Chancellor) of Visva Bharati University at the meeting of the Court held under the chairmanship of Dr Surajit Sinha, Vice-Chancellor of the university, for a term of three years.

2. Mr W.M. Kalmegh has been appointed Vice-Chancellor of Nagpur University.

3. Dr (Smt) Madhuri Shah has been re-appointed as the Vice-Chancellor of S.N.D.T. Women's University for a further term of three years, with effect from 11th April, 1978.

4. Dr. Hari Narain, Director of the National Geophysical Laboratory, Hyderabad, has been appointed Vice-Chancellor of Banaras Hindu University.

5. Prof. S.C. Dube, Vice-Chancellor, University of Jammu, has been invited by the UNESCO to participate in a meeting of Experts to discuss Educational Institutions and Moral Education being held at Sofia (Bulgaria).

6. Dr J.S. Neki, Professor of Psychiatry, All-India Institute of Medical Sciences, has been appointed Director of the Postgraduate Institute of Medical Education and Research, Chandigarh.

7. Dr. K. B. Y. Thotappa, Head of Postgraduate Political Science Department, Mysore University has been appointed member of the U.G.C. Panel on Political Science and Public Administration.

8. Prof. M.V. Mathur, Director, National Staff College for Educational Planners and Administrators, has been re-nominated on the Executive Council of the Aligarh Muslim University for a term of three years.

UGC to assist in building staff quarters

Professor Satish Chandra, Chairman, University Grants Commission, announced in Madras that the Commission would help the universities in providing residential accommodation to their essential administrative staff. He was speaking at a function organised by the Madras University Staff Recreation Club to felicitate Dr Malcolm S. Adiseshiah, Vice-Chancellor of the University on his nomination to the Rajya Sabha. Prof. Satish Chandra said that it may not be possible to provide residential quarters to all the university staff but a beginning has been made and the University Grants Commission will be coming forward to assist building quarters for the essential staff. The Commission was also conscious of the need to strengthen the administrative infrastructure of the universities and to appoint committees to ascertain the various needs of the university staff.

More PG seats in APAU

The Andhra Pradesh Agricultural University has decided to increase the intake in MSc class by 50 per cent during 1978-79 in its College of Agriculture, Rajendranagar. This increase will however be subject to the approval of the Government. Dr C. Krishna Rao, Vice-Chancellor of the university said that the students' council and joint action committee of the College of Agriculture had submitted a memorandum to him requesting to solve certain problems of the students. According to the wishes of the students the system of conducting the comprehensive examination for MSc students of the college might be discontinued subject to the approval of the Academic Council. It was agreed to conduct viva-voce examination within four months after the submission of thesis to help students get their degrees without loss of time.

Panel to study Panjab University Act

A committee comprising representatives of the governments of

Punjab and Haryana and the University Grants Commission has been formed to look into the various provisions of the Panjab University Act and to suggest suitable amendments. The committee would also consider the question of providing representation of students on the university bodies.

The Gajendragadkar Committee on governance of universities had already recommended that representation of students might be provided on the Senate and Academic Councils of the universities. Provision also exists in the Acts of several universities for representation of students on university bodies. Recently the Vice-Chancellor of Panjab University gave an assurance in one of the meetings of the Senate that the students would be given representation on the Senate when necessary amendments to the University Act were carried out.

Workshop on correspondence courses

The University Grants Commission, in collaboration with the British Council, will organise a workshop on correspondence courses in October. A three-member team of educational experts from Britain will participate in these deliberations. Initially it has been planned to hold one session at Panjab University Directorate of Correspondence Courses in Chandigarh and the other at Madurai University.

PAC against proliferation of universities

The Public Accounts Committee wants the University Grants Commission to make effective use of the statutory powers to check the mushroom growth of universities and colleges without regard to facilities for the standards of teaching. In its report presented to the Lok Sabha, Mr C. Stephen, Chairman of the Committee, pointed out that number of universities and colleges has increased from 103 and 4,158 respectively in 1972-73 to 115 and 4,569 in 1976-77.

Barring the temporary ban on

release of further grants, the Commission has not so far withheld the grants to any university. Neither it has used the powers under the UGC Act as an effective instrument against proliferation of sub-standard universities and colleges. The committee wants the Commission to prevent unplanned growth of universities and colleges.

The committee has also recommended to the Education Ministry to initiate action to see that colleges are classified in terms of level and achievement without undue delay and this classification should be used for guidance in allocation of grants. It wants the government to give a fresh look to the principle of matching grants and to modify it in such a manner that it does not act as a stumbling block for such universities and colleges in states which are less advanced educationally and economically and are unable to take advantage of the facilities of development grants available from the UGC.

The committee also wants to take positive steps to make the Commission dynamic and vigorous, capable of shouldering the increased responsibilities in the field of higher education. It has suggested reorganisation of the Commission which, besides the wholetime chairman and vice-chairman, should have few more whole-time members.

Symposium on stress and environment

A Symposium on "Stress and Environment," organised by the Indian Association of Environmental Biologists, was inaugurated by Professor Mohammed Shafi, the Pro-Vice-Chancellor, Aligarh Muslim University at Aligarh recently. The inaugural session was presided over by Professor J.P. Thapliyal.

According to the President of the Association, Professor Nawab Hassan Khan, some important topics like Toxic Chemicals and Environment, Stress and Population, Stress and Behaviour were discussed during the 3-day deliberations.

IATF holds annual conference at BHU

The Eighteenth All India Annual Conference of Indian Association of Teachers of French was held this year under the auspices of the Banaras Hindu University. The conference was inaugurated by Professor T.R. Anantharaman, Rector, BHU. Prof. A.K. Banerjee, Dean, Faculty of Arts, BHU, presided over the conference.

Prof. K.J. Mahale, Rector of Jawaharlal Nehru University, New Delhi and the General Secretary of the Association in his report outlined the activities of the Association and also the achievements relating to the teaching of French in Indian universities and colleges.

Prof. Anantharaman felt that the cultural ties are stronger than any kind of political or commercial relations. Learning of a foreign language, he said, opens out a window on a part of the world. It helps in establishing contracts between peoples of the world for better harmony, peace and understanding.

Several delegates from different universities participated in the conference and presented their papers which were followed by lively discussions. The special focus of discussion was on the following topics:

- (i) Problem of teaching French in India
- (ii) Comparative studies in literature
- (iii) Indo-French cultural relations.

At the conclusion of the conference the following resolutions were adopted:

1. The Indian Association of Teachers of French takes note of the problems of teaching of French in the Primary Schools in Chandernagore and appeals to the authorities concerned to look into the matter urgently and take necessary steps to solve the difficulties of the teachers concerned and to provide adequate facilities for the improvement of the teaching of French.

2. Considering the growing interest in French throughout India, considering also the importance of oral expression in the process of teaching effectively a living language like French, this

Association requests the authorities concerned to provide for:

- (i) A larger number of native French experts to be made available in keeping with the specific needs of the universities/institutions in various parts of the country. At least one such teacher to be attributed to Universities with M.A. programmes in French;
- (ii) A larger number of fellowships of one to three months duration for a Refresher Course in French Language, Literature and Civilization in France;
- (iii) A larger number of French Government scholarships for higher studies/research in France for those who have or are about to complete M.A. in French;
- (iv) A larger number of teacher-fellowships at Indian Universities for M.Phil/M.Litt/Ph.D courses in French;
- (v) Substantial financial grants for equipping departments of French with modern teaching aids, books and periodicals in French; and
- (vi) A national French documentation/pedagogical Centre.

3. Taking into consideration the existing facilities for teaching of French in India and the wealth of Indian languages and literature, the I.A.T.F. urges the Centres/Departments of French in the Universities to avoid as far as possible the repetition of existing courses and to develop new programmes of studies in the domain of linguistics, comparative literature, materials production, franco-phone literature etc.

4. This meeting of the Indian Association of Teachers of French notes with satisfaction that the University Grants Commission sponsored a meeting of the Heads of the Departments of French, German and Russian at Central Institute of English and Foreign Languages, Hyderabad in 1976, to explore the possibilities of having a uniform pattern of syllabus and system of evaluation at the Certificate course level at all Indian Universities.

It urges the Institutions concerned to consider the recommendations of the Heads of the Departments and forward their comments to the Secretary of the Association.

5. Considering paucity of reference books, source materials in Indian languages vis-a-vis French, this meeting of the Indian Association of Teachers of French recommends to the University Grants Commission/Ministry of Education, Government of India/Public academic institutions to assist financially, the following projects of national and international importance:

- (i) Compilation of basic dictionaries in Hindi, French and another Indian language and vice-versa.
- (ii) Compilation of a bibliography of translations of literary works, done from Indian languages into French and vice-versa.
- (iii) Publication of bi-lingual translations of French and Indian literary works.
- (iv) Publication of anthologies/selected works in Indian languages edited in French for the use in French-speaking countries and similar French works to be edited in Indian languages and English.

6. The Indian Association of Teachers of French notes with satisfaction the great importance attached by the University Grants Commission to the development of the Departments of Foreign Languages in India and requests the U.G.C. to get detailed periodical reports on the working of these Departments. It further requests the U.G.C. to keep itself informed about the progress in implementing the recommendations and suggestions of the U.G.C. to the Departments concerned and take up proper follow-up actions.

7. This meeting of the Indian Association of Teachers of French requests the Ministry of Education and the Ministry of Information and Broadcasting to broadcast programmes in important Foreign Languages as a part of national programme, at convenient hours for the benefit of Indian listeners in these languages.

JAWAHARLAL NEHRU UNIVERSITY Advt. No. Aca. III/5/78

Applications are invited for the following posts :

I. SCHOOL OF LANGUAGES

1. Professor/Senior Fellow and/or Associate Professors/Fellows in Japanese/Chinese

Essential (For Professor/Senior Fellow)

(a) Consistently good academic record with at least a high second class Master's degree in the relevant discipline or an equivalent qualification from an Indian/Foreign University; (b) A doctor's degree or published work of an equally high standard; and (c) About ten years' experience of teaching and/or research.

Essential (for Associate Professors/Fellows)

(a) Consistently good academic record with at least a high second class Master's degree in the relevant discipline or an equivalent qualification from an Indian/Foreign University; (b) A doctor's degree or published work of an equally high standard; and (c) About five years' experience of teaching and/or research.

Desirable: (for Professor/Sr. Fellow and/or Associate Professors/Fellows in Chinese)

(a) Specialisation in Chinese language; (b) Experience of Post-Graduate level teaching of translation particularly in journalistic, scientific and technical literature.

Desirable: (for Professor/Sr. Fellow and/or Associate Professors/Fellow in Japanese)

(a) Experience in translation/interpretation from Japanese into English and Hindi and experience of teaching of translation at M.A. level; (b) Experience in preparation of teaching aid/materials in Japanese.

2. Associate Professors/Fellows in Russian / German / French / Indonesian/ Persian.

Essential (for all posts)

(a) Consistently good academic record with at least a high second class Master's degree in the relevant discipline or an equivalent qualification from an Indian/Foreign University; (b) A doctor's degree or published work of an equally high standard; and (c) About five years' experience of teaching and/or research.

Desirable

For German

(a) A very high degree of fluency in written and spoken German; (b) Sufficient experience of teaching German literature/translation; (c) Experience in materials production and experience in training foreign language teachers.

For Persian

(a) Specialisation in Modern Persian Language and Literature; (b) Experience of Post-Graduate level teaching of translation particularly in Journalistic, Scientific and Military literature from Persian to English and vice versa; (c) Methodology of teaching Modern

Persian to foreigners; and (d) Knowledge of ancient languages of Iran.

For French

(a) Degree in Translation/Interpretation, practical experience in simultaneous and consecutive interpretation at International Conference; or (b) Experience in teaching courses relating to French civilization and/or French Art and Literature.

For Indonesian

Experience in teaching Indonesian and materials production.

For Russian

Specialisation in theoretical grammar and linguistics with experience of teaching post-graduate courses.

3. Assistant Professors/Associate Fellows in Japanese/Uzbek/French/German/Italian/Linguistics

Essential (for all)

(a) Consistently good academic record with at least a high second class Master's degree in the relevant discipline or an equivalent qualification from an Indian/Foreign University; (b) a doctor's degree or published work of an equally high standard; and (c) Some teaching and/or research experience.

Note : a & b are for Assistant Professors;

a & c are for Associate Fellows.

Desirable

For Japanese

(a) Experience of translation work from Japanese into English and vice versa;

(b) Good knowledge of Japanese literature/history and culture of Japan/scientific and technical translation work.

For French

Training in modern methods of teaching French at various levels and training in the production of teaching materials.

OR

Specialisation in General Linguistics in French, semantics and lexicology.

For German

(a) A very high degree of fluency in written and spoken German.

(b) Some experience of teaching German as a foreign language to specialised groups.

(c) High degree of proficiency and specialisation in either German literature or translation-cum-linguistics.

(d) Post M.A. Certificate in teaching German as a foreign language from C.I.E.F.L., Hyderabad.

(e) Experience in materials production.

For Italian

(a) Specialization in Italian language.

(b) Methodology of teaching Italian to foreigners.

For Linguistics

(a) Research in an Indian language.

(b) Theoretical Linguistics with specialisation in Generative Grammar.

II. SCHOOL OF ENVIRONMENTAL SCIENCES

4. Assistant Professor/Associate Fellow (Physiology)

Essential: (a) Consistently good academic record with at least high

second class Master's degree in Physiology or its equivalent qualification from an Indian/Foreign University; (b) A doctor's degree or published work of an equally high standard; and (c) Some teaching and/or research experience.

Note: a & b are for Assistant Professor; a & c are for Assoc. Fellow

Desirable

(a) Specialisation in environmental physiology; and

(b) Working experience on the care and maintenance of laboratory animals.

III. SCHOOL OF SOCIAL SCIENCES

5. Associate Professor/Fellow in European History

Essential

(a) Consistently good academic record with at least a high second class Master's degree in European History or its equivalent qualification from an Indian/foreign University; (b) a doctor's degree or published work of an equally high standard; and (c) About five years' experience of teaching and/or research.

Desirable

Specialization in History of Soviet Union or Eastern Europe.

6. Associate Professor/Fellow or Assistant Professor/Associate Fellow in Medieval History of West Asia or Central Asia

Essential (for Associate Professor/Fellow)

(a) Consistently good academic record with at least a high second class Master's degree in Medieval History of West Asia or Central Asia or its equivalent qualification from an Indian/Foreign University; (b) a doctor's degree or published work of an equally high standard; and (c) about five years' experience of teaching and/or research.

Essential (for Assistant Professor/Associate Fellow)

(a) Consistently good academic record with at least a high second class master's degree in Medieval History of West Asia or Central Asia or its equivalent qualification from an Indian/foreign University; (b) A doctor's degree or published work of an equally high standard; and (c) some teaching and/or research experience.

Note: a & b are for Assistant Professor; a & c are for Associate Fellow.

7. Associate Professors/Fellows

Essential

(a) Consistently good academic record with at least a high second class Master's degree in Political Science or its equivalent qualification from an Indian/foreign University; (b) A doctor's degree in Political Science or published work of an equally high standard; and (c) About five years' experience of teaching and/or research.

Area of Specialisation

(i) Federal Polity; Comparative Politics

(ii) Research Methods and Political Analysis

Desirable

Should have published work to his credit. Candidates for post in Research Methods and Political Analysis should

have applied contemporary techniques of Political Science Research in their own researches.

Note: (i) Those who do not have the above mentioned specialisation need not apply.

(ii) Those who had applied in response to our earlier advertisement and come under the category of specialisation may apply again.

8. Associate Professor/Fellow in Quantitative Methods in Regional Analysis Essential

(a) Consistently good academic record with at least a high second class Master's degree in Economics or Geography of an Indian University or its equivalent qualification from an Indian/foreign University; (b) A doctor's degree or published work of an equally high standard; and (c) About five years' experience of teaching and/or research.

Desirable

Specialisation in the Application of Quantitative Methods to Regional Analysis; (b) Adequate acquaintance with Modern Methods of data, processing.

9. Associate Professor/Fellow in Physical Geography Essential

(a) Consistently good academic record with at least a high second class Master's degree in Geography or its equivalent qualification from an Indian/foreign University; (b) A doctor's degree or published work of an equally high standard; and (c) About five years' experience of teaching and/or research.

Desirable

Specialisation in climatology with special reference to water resources; and (b) adequate acquaintance with modern techniques of assessment and interpretation.

10. Associate Professor/Fellow in Regional Geography Essential

(a) Consistently good academic record with at least a high second class Master's degree in Geography or its equivalent qualification from an Indian/foreign University; (b) A doctor's degree or published work of an equally high standard; and (c) About five years' experience of teaching and/or research.

Desirable

Specialisation in regional planning.

11. Associate Professor/Fellow (Science Policy) Essential

(a) Consistently good academic record with at least a high second class Master's degree in any of the Social Sciences or its equivalent qualification from an Indian/Foreign University; (b) A doctor's degree or published work of an equally high standard; and (c) about five years' experience of teaching and/or research.

Desirable

Special interest in the area of Science Policy/Studies Preference would be given to those who have already done research in the area of Science Policy.

12. Associate Professor/Fellow (Social Psychology) Essential

(a) Consistently good academic record with at least a high second class

Master's degree in Social Psychology or an equivalent qualification from an Indian/Foreign University; (b) A doctor's degree or published work of an equally high standard; (c) about five years' experience of teaching and/or research.

Specialisation in any one or more of the following areas

(a) Social Psychology of Groups and Interaction Processes; (b) Personality and Social Structure; and (c) Social Psychology of Communication and Collective Behaviour.

Desirable

Some experience in guiding research.

13. Associate Professor/Fellow in Sociology

(a) Consistently good academic record with at least a high second class Master's degree in Sociology or an equivalent qualification from an Indian/Foreign University; (b) A doctor's degree or published work of an equally high standard; (c) about five years' experience of teaching and/or research.

Specialisation in any one or more of the following areas

(a) Sociology of Modernization and Change;

(b) Sociology of Complex Organisation;

(c) Sociology of Professions and Occupations; and

(d) Industrial Sociology.

Desirable

Some experience in guiding research.

14. Assistant Professor/Associate Fellow in Ancient Indian History Essential

(a) Consistently good academic record with at least a high second class Master's degree in Ancient Indian History or its equivalent qualification from an Indian/foreign University; (b) A doctor's degree or published work of an equally high standard; (c) Some teaching and/or research experience.

Note: a & b are for Assistant Professor; a & c are for Associate Fellow

Desirable

Specialisation in Social and Economic History of Ancient India.

15. Assistant Professor/Associate Fellow in Geography Essential

(a) Consistently good academic record with at least a high second class Master's degree in Geography or its equivalent qualification from an Indian/foreign University; (b) A doctor's degree or published work of an equally high standard; and (c) Some teaching and/or research experience.

Note: a & b are for Assistant Professor; a & c are for Associate Fellow

Desirable

Specialisation in Developmental strategies for backward areas.

IV. SCHOOL OF COMPUTER & SYSTEMS SCIENCES

16. Hardware Engineers-cum-Programmers Essential

A good Master's degree in Electrical Engineering or Electronics or a good B. Tech. degree in Electrical Engineering preferably followed by a Post-Graduate Diploma in Computer Science or equivalent qualification.

Experience

(a) Candidates should have experience of working with third generation computers and their maintenance; and

(b) Should have experience in providing programming consultancy for users.

SCALES OF PAY

Professor/Senior Fellow

Rs. 1500-60-1800-100-2000-125/2-2500

Associate Professor/Fellow

Rs. 1200-50-1300-60-1900

Assistant Professor/Associate Fellow

Rs. 700-40-1100-50-1600

Hardware Engineer-cum-Programmer

Rs. 700-40-900-EB-40-1100-50-1300.

plus usual allowances as admissible to the members of the staff in the Central Universities.

Relaxation in any of the qualifications may be made (a) in favour of persons of eminence or of high academic professional distinction, and (b) in exceptional cases where adequately qualified persons are not available but are otherwise found suitable for the respective positions. It will also be open to the University to consider the names of suitable candidates who may not have applied.

The selected candidates will be expected to participate in the teaching and research programmes in the concerned disciplines in other schools of the University as well as in the programmes offered in their own Centres of Studies.

Normally appointment of Fellows and Associate Fellows is made on contract basis for a period ranging from one to three years.

Benefits of C.P. Fund-cum-Gratuity/G.P. Fund-cum-Pension-cum-Gratuity are available as per University rules.

Persons already in employment should route their applications through proper channel.

Due consideration will be given to candidates belonging to SC/ST at the level of Assistant Professor/Associate Fellow.

Second class (mail) rail fare (both ways) will be paid to candidates invited to appear for interview from outstation by the shortest route subject to the production of rail receipt.

Applications, separate for each post, on the prescribed form, obtainable free of cost from the University by sending a self-addressed and stamped envelope of 23cm. x 10cm. size to the DEPUTY REGISTRAR (ACADEMIC) Jawaharlal Nehru University, New Mehrauli Road, New Delhi-110057, should reach him latest by 3rd June 1978.

Candidates from abroad, applying for faculty positions, may apply on plain paper, (but their applications should reach the University by the last date) furnishing all the relevant information such as their names; date and place of birth; marital status; nationality; state of domicile, postal and permanent addresses; father's name and address; academic and professional attainments; full details of (a) publications, and (b) research projects under taken; language (s) known; details of visits to foreign countries; and the names and addresses of at least two persons well acquainted with the candidates professional work

who should also be requested by the candidate to forward to the DEPUTY REGISTRAR (ACADEMIC) confidential report concerning the candidate.

**PUNJABI UNIVERSITY
PATIALA**

Advertisement No. 173/MP/Estt./A/1/78
Applications are invited for the following posts:

(1) Professors: Three (One each in Zoology, Comparative Religion and Tamil Chair).

(Grade: Rs. 1500-60-1800-100-2000-125/2-2500).

Qualifications

An eminent Scholar with published work of high quality actively engaged in research. Ten years' experience of teaching and/or research. Experience of guiding research at doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

Specializations

Professor in Zoology

Entomology / Parasitology / Genetics / Cytology.

Professor in Comparative Religion

The candidate should be First or high second class Master's degree in Religious Studies/Philosophy/History/Sociology and Ph.D. in any area of India's religious traditions.

Candidates must have good knowledge of at least one of the classical languages of India and be familiar with the history and doctrines of the major religions of Indian origin i.e. Hinduism, Buddhism, Jainism and Sikhism.

Professor in Tamil Chair

Good academic record.

Doctorate in Tamil linguistics.

Ten years teaching experience of Tamil to non-Tamilians.

Specialization in socio-linguistics problems of Tamil and Dravidian linguistics.

(2) (i) Reader: One (Saint Shankaradeva Chair) (Rs 1200-1900).

(ii) Co-ordinator (Training Orientation Course) (NSS): One

(Grade: Rs. 1100-1600).

Qualifications

(a) Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

(b) About five year's experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position. This condition is relaxable in the case of candidates with outstanding research work.

Specialization for the Post of Reader

Master's degree should be in Assamese or Sanskrit/English with Assamese in B.A. Doctorate degree should preferably be in aspects of religion of Assam or comparable research work.

Specialization for the post of Co-ordinator (NSS)

Qualifications in (a) and (b) above should be in a Social Science discipline.

Candidates with at least 3 years' experience of organising N.S.S. activities including Orientation Seminars etc. will be preferred.

(3) Research Fellows: Two (Saint Shankaradeva Chair).

(Grade: Rs. 700-40-1100-50-1300).

Qualifications

First or high second class M.A. in Assamese, well-grounded in English or M.A. in English/Sanskrit with Assamese in B.A. with knowledge of, or capacity to learn, Punjabi, preferably with record of research.

(4) Lecturer: One (Physics)

(Grade: Rs. 700-40-1100-50-1600).

Qualifications

(a) A Doctor's degree or research work of an equally high standard in the relevant subject; and

(b) Consistently good academic record with 1st or high 2nd class (b in the seven point scale) Master's degree in a relevant subject or an equivalent degree of a foreign University.

(c) Qualifications prescribed in (b) above are relaxable in case the research work of a candidate as evident either from his thesis or from his published work is of a very high standard. If a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a consistently good academic record (weightage being given to M.Phil or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Additional Qualifications

Candidates should have special qualifications and training in TV electronics to teach post-graduate diploma classes in Electronic and TV Engineering run by the department.

University Service and Instrumentation Centre

(5) Scientific Officer: One

(Grade: Rs. 700-40-900-EB-40-1100-50-1300).

At least second class B.E./B. Tech./M.Sc. with 2 years experience in operation of sophisticated instruments/repairs and maintenance of modern instruments.

(6) Senior Technical Assistant

(Grade Rs. 550-25-750-EB.30-900).

Second class B.E./B.Tech./M.Sc., or a diploma in Engineering or Electronics/B.Sc. with 3 years experience in operation of modern instruments and their repair and maintenance/assistance in R&D in instrumentation.

OR

Diploma in Mechanical Engineering

with 5 years' experience in workshop practice and ability to lead and supervise the work of a group (Candidates with additional experience of supervisory work in a mechanical workshop will be preferred). Candidates will be given practical test in the concerned trades at the time of interview.

(7) Technician 'A' (Electronics)

(Grade: Rs. 225-5-260-6-290-EB-6-308).

Certificate Course from I.T.I. in Electronics/Electrical Engineering.

(8) Technician 'B' Two: (One each in-Electronics and Optical Shop).

(Grade Rs. 320-8-400-10-450).

For Electronics

Certificate Course from ITI in Electronics/Electrical Engineering with 5 years experience.

For Optical Shop

Ten years' Schooling plus 3 years experience in the trade.

(9) Technician 'C':

(Grade: Rs. 380-12-500-EB-15-560).

Certificate Course from ITI with 7 years' experience in mechanical shop.

OR

10 years schooling and 4 years experience in glass blowing.

OR

10 years schooling plus 5 years experience in optical shop.

(10) Junior Research Fellow (U.G.C.) (One in Pol. Science) (Rs. 400/-p.m. all inclusive for first two years and Rs. 500/- p.m. inclusive for subsequent two years.)

Qualifications

Junior Fellowships are open to persons preferably below the age of 30 years, who have obtained a Master's degree of a recognised University in the first or second division (with at least 55% marks) or at least b+ in the grade system.

(11) Research Scholarships: (One in studies pertaining to one of the major Religious Traditions of India and Three for Saint Shankaradeva Chair) tenable for two years in the first instance @ Rs. 400/-p.m. (all inclusive).

Qualifications

Candidates should possess at least second class Master's degree with at least one year teaching/research experience after obtaining the Master's degree provided that the condition of experience may be relaxed in the case of first class M.A.'s provided further that a candidate with at least 55% marks both in B.A. and M.A. could also be considered in case no first-class M.A. is available.

Specialization

For Religious Studies

Master's degree should be in Religious Studies/Philosophy/Ancient Indian History/Literature. Preference will be given to candidates with dissertation in M.A. Evidence of interest in research in Religion and acquaintance with the scriptural Language of Religion selected for Research, essential.

For Shankaradeva Chair

The Masters' degree should be in Assamese, well grounded in English or M.A. in English/Sanskrit with Assamese in B.A.

General

Higher start within the grade admissible depending upon the ability and experience of the candidate. House rent and Dearness allowance, Provident Fund and Medical facilities according to the University rules.

Applications, complete in all respect on the prescribed form, accompanied by a crossed postal order worth Rs. 5/- (Rs. 2/- for candidates belonging to Scheduled Castes/Tribes and Backward Classes) drawn in favour of the Registrar, Punjabi University, Patiala should reach the University by 25.5.1978. The forms can be had from the Superintendent (Establishment) by sending a self-addressed envelope of the size of 23×10 cms stamped with 25 paise postage.

Persons already in service should apply through proper channel; Govt. servants who are not in a position to submit their applications through proper channel before the due date should submit an advance copy before the due date and regular applications through proper channel by 29.5.1978.

REGISTRAR

UNIVERSITY OF GORAKHPUR GORAKHPUR

No. 1111-22 Dated May 4, 1978
Advertisement No. 5

Applications on the prescribed form (8 copies) available from the Office of the Registrar on payment of Rs. 5/- for the post of Professor/Reader and Rs. 2/- for the post of lecturer as registration fee payable in cash or Postal Order drawn in favour of the Registrar, University of Gorakhpur, Gorakhpur by name, are invited so as to reach this office through the employer, if employed, not later than 30-5-78 for the following posts :

1. Lecturer

8 posts as under (No. can be increased/decreased)

Geography: One temporary
Mathematics: Two temporary
Botany: One temporary
Hindi: One temporary
Education: One permanent
Physics: Three temporary
Tibetan: One permanent
Scale of pay: 700-40-1100-50-1600

Qualifications

(1) (a) A doctorate in the subject of study concerned or a published work of a high standard in that subject, and

(b) Consistently good academic record (that is to say the overall record of all assessments throughout the academic career of a candidate) with first class or high second class (that is to say, with an aggregate of more than 54% marks) Master degree in the subject concerned or equivalent degree of a foreign University in such subject.

(2) Where the Selection Committee is of the opinion that the research work of a candidate as evidenced either by his theses or by his published work, is of a very high standard, it may relax any of

qualifications specified in sub-clause (b) of clause (1).

(3) If a candidate possessing a qualification in sub-clause (a) of clause (1) is not available or is not considered suitable (due weightage being given to M. Phil or equivalent degree or research work of quality, may be appointed on the condition that he will attain the prescribed qualification (namely doctorate or published work as aforesaid) within 5 years from the date of his appointment.

Provided that where the teacher so appointed fails to attain the prescribed qualification within the said period of 5 years, he shall not be entitled to yearly increments after such period, until he attains such qualifications.

2. Reader

(a) 8 posts as under (No. can be increased/decreased)

Hindi: One temporary
History: One temporary
Education: One permanent
Economics: One temporary
Zoology: One temporary
Botany: One temporary
Commerce: One permanent
Ancient History: One permanent
Scale of pay: 1200-50-1300-60-1900

Qualifications

Persons should possess the minimum qualification prescribed for the post of a lecturer as mentioned above and in addition, the candidate should have:

(a) Post-graduate teaching experience of at least 5 years.

(b) Capacity of conducting and guiding research.

In exceptional cases, the Selection Committee may relax the above qualifications in view of long teaching experience and research work of a high order.

3. Professor

Zoology: One post temporary
Scale of pay: 1500-60-1800-100-2000-125/2-2500

Qualifications

Persons should possess the minimum qualification prescribed for the post of a lecturer as mentioned above and in addition, the candidate should have a reputation of eminent scholarship and must have published standard research work to his credit and should have considerable experience of guiding research. No teacher appointed before January 26, 1977 shall be deemed to be qualified for appointment to the post of Reader or Professor if he does not possess the qualifications mentioned above provided that where the Selection Committee is of the opinion that the research work of a candidate as evidenced by his thesis or by his published work is of a very high standard, it may relax any of the qualifications specified in sub clause 1 (b).

In the case of appointment of a Professor, the Committee may with the approval of the Vice-Chancellor consider the names of persons who have not applied.

The candidates will be required to appear for interview, if called, at their

own expenses. The Selection Committee may recommend higher initial salary to a person specially qualified for the above posts. It will be open to University not to fill up any post advertised. Canvassing in any form by or on behalf of the candidate will disqualify him.

REGISTRAR

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ALIGARH MUSLIM UNIVERSITY ALIGARH

Advertisement No. 5/78-79

Applications on the prescribed form, are invited for the following posts :

1. Professors in Civil Engg. (2 posts in Structural Engg.) Scale : Rs. 1500-2500 plus allowances. Qualifications : A first or high second class Basic Degree in Civil Engineering. Ordinarily Post-graduate Degree in Civil Engineering. Ordinarily ten years' experience of which five years should be in a position of responsibility in teaching in an Engineering Institution of a Degree standard and/or Research. Desirable: Published Research work.
2. Professor of Civil Engg. (Hydraulic Engg.). Scale : Rs. 1500-2500 plus allowances. Qualifications : A first or high second class Basic Degree in Civil Engineering. Ordinarily Post-graduate Degree in Civil Engineering. Ordinarily ten years' experience of which five years should be in a position of responsibility in teaching in an Engineering Institution of a Degree standard and/or Research. Desirable: Published Research Work.
3. Professor of Civil Engineering (Temporary but likely to become permanent). Scale : Rs. 1500-2500 plus allowances. Qualifications : A first or high second class Basic Degree in Civil Engineering. Ordinarily Post-graduate Degree in Civil Engineering. Ordinarily ten years' experience of which five years should be in a position of responsibility in teaching in an Engineering Institution of a Degree standard and/or Research. Desirable : Published Research work
4. Readers in Civil Engineering (2 posts in Structural Engineering). Scale : Rs. 1200-1900 plus allowances. Qualifications : Basic Degree in Civil Engineering and seven years' experience, or Master's Degree in Engineering with five years' experience or Doctorate with two years' experience of which two years should be in teaching in an Engineering Institution of a Degree standard and/or Research. Desirable : Published Research work.
5. Readers in Civil Engineering (2 posts in Hydraulic Engg.). Scale : Rs. 1200-1900 plus allowances. Qualifications : Basic Degree in Civil Engineering and seven years' experience, or Master's Degree in Engineering with five years' experience of Doctorate with two years' experience of which two years should

be in teaching in an Engineering Institution of a Degree standard and/or Research Desirable: Published Research work.

6. Reader in Civil Engineering (Soil Mechanics).

Scale : Rs. 1200-1900 plus allowances. Qualifications : Basic Degree in Civil or Master's Degree in Engineering with five years' experience or Doctorate with two years experience of which two years should be in teaching in an Engineering Institution of a Degree standard and/or Research.

Desirable: Published Research work.

Prescribed application forms and instructions may be had from the Deputy Registrar (Executive) either personally or by sending a self-addressed envelope of 23x10 cms. Last date for receipt of applications is 25th May, 1978. Incomplete applications and those received late may not be considered.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T.A. equal to one single second class railway fare only.

Jamalur Rahman
REGISTRAR

INDIAN INSTITUTE OF TECHNOLOGY, KANPUR

Advertisement No. 13/78

Applications are invited for the following posts for the Training and Orientation Centre of the National Service Scheme of the Institute.

1. Coordinator (Training) One, (Consolidated salary in the range of Rs 1200-1900)

2. Steno-typist One, (Rs 450-850)

Requirements for post No. 1

Qualifications & Experience

1. Engineering/Science graduate with a degree in social work.
2. Field experience in rural development.
3. Experience in organising seminar, training programmes etc.

Age

Preferably below 35 years.

Responsibilities

To run training and orientation centre and to participate in the NSS Programme of this Institute. Besides organising orientation courses and refresher courses, training and orientation centre is expected to perform the following functions:

- (i) Assisting the universities in the planning and conducting of university level pre-camp orientation courses for special camping programme.
- (ii) Developing and providing consultancy services to the universities and colleges in the areas of programme planning, training, supervision, evaluation etc.
- (iii) Research and evaluation studies of specific NSS programmes.
- (iv) Acting as clearing house of information on NSS through preparation, publication and circulation of literature on various aspects of the programme.

- (v) Providing on the spot guidance to the universities and colleges in camps, etc. through personal visits.

Requirements for post No. 2

Qualifications & Experience

1. Graduate
2. Speed in shorthand and typewriting 120 w.p.m. and 40 w.p.m.
3. Knowledge of office procedure
4. Experience in work relating to seminars, training programme etc.

Age

Below 30 years.

The posts are purely temporary and appointments will initially be made for two years. Selected persons are expected to join immediately.

Applications giving name, address, date of birth, qualifications and experience, should reach the Registrar, Indian Institute of Technology, Kanpur-208016 on or before June 5, 1978.

SAURASHTRA UNIVERSITY

Applications in the prescribed forms are invited for the undermentioned posts in the various departments of the University. Application forms alongwith detailed requirements of qualifications and experience for these posts will be available from the Registrar, Saurashtra University, University Campus, Kalawad Road, Rajkot-360005 on sending a self-addressed envelope of the size 23 cm x 11 cm with postage stamps worth Re 1.15.

Applications (seven copies) accompanied by Indian Postal Order for Rs 5 crossed in favour of the Registrar, Saurashtra University, Rajkot, should reach this office on or before 5th June, 1978.

1. Department of Mathematics/Statistics
Readers-2

2. Department of Gujarati

(a) Professor-1; (b) Reader-1

3. Department of Economics

(a) Professor-1; (b) Readers-2; (c) Lecturers-3 (Preferably in Quantitative Economics, Development Economics, Agricultural Economics, Management Economics and Rural Economics).

4. Department of Education

Professor-1 (Educational Sociology/Comparative Education).

5. Department of Chemistry

Professor-1 (Industrial Chemistry, with special reference to Inorganic Materials).

Reader-1 (Inorganic, preferably with the bias Marine Chemistry specialization).

6. Department of Commerce

(a) Professor-1; (b) Reader-1; (c) Lecturers-2 (Emphasis in Accountancy and Transport).

7. Department of Law

(a) Professor-1; (b) Reader-1; (c) Lecturers-2 (One specialized in Mercantile Law).

8. Department of Bio-Sciences

Professor-1 (M.Sc. Degree in Plant or Animal Sciences with specialization in Animal Physiology, Cytology, Genetics, Animal Ecology or Animal behaviour, Marine Ecology).

9. Department of History

Professor-1 (Preferably in Modern Indian History).

Pay Scales

(1) Professor: Rs 1500-60-1800-100-2000-125/2-2500

(2) Reader: Rs 1200-50-1300-60-1600-assessment-60-1900

(3) Lecturer: Rs 700-40-1100-50-1300-assessment-50-1600

Reservation for Scheduled Castes and Scheduled Tribes will be 5% and 10% respectively. Age ordinarily not exceeding 55 years. The posts are permanent and carry benefit of Contributory Provident Fund as per University rules. Dearness Allowance and House Rent Allowance will be paid as per University rules. Higher initial salary in the scale may be considered in case of exceptionally qualified and experienced persons. Qualifications and experience relaxable in special cases. Candidates in employment must submit their application through their present employer. Those knowing Gujarati and/or Hindi will be preferred. Candidates may be called for interviews in middle of June, 1978.

B.F. Shah
I/C. REGISTRAR

(Continued from page 943)

the last thing they can afford to flaunt.

If these are some of the more visible contours of the present-day cultural landscape, would one take it as an exhausted culture? A distinguished writer has chosen to call it a 'wounded' one. Is it dying?

If one thinks only of the elitist sections, it might appear to be such a one. But if one cared to pause and think of the inner resources of the common man in India, which are made evident in a potent manner now and again, one could not take the culture lightly and just write it off. I should say, Indian culture is live and kicking, thanks to the common man.

Somebody has defined culture as something that remains with one when everything is taken away from him. Perhaps pretty much remains with an average Indian. Somebody told me about a friend's recent experience. The friend was helping villagers in cyclone-hit Andhra Pradesh. He approached a woman in a damaged hut and offered help. She only said, go to the next hut. She is more in difficulty.

(Excerpts from the convocation address delivered by Prof. Uma Shankar Joshi, President, Sahitya Academy, at the Sri Venkateswara University).

A list of Doctoral Theses Accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Sarkar, Annapurna. On asymptotic solution of systems of differential equations and their application in the study of spectra. University of Calcutta.

Physics

1. Bedi, Hardip Singh. Some aspects of planetary-scale atmospheric circulation. University of Poona.
2. Bishan Nath. Studies in atmospheric electric elements. University of Kashmir.
3. Gorbali, Mahantagouda Rayanagouda. Spectroscopic investigation of atomic flames. Karnatak University.
4. Hanjura, Ashok Kumar. Investigating the techniques for extending gain-temperature response of a transistor amplifier. University of Kashmir.
5. Mishra, Uma Kant. Studies in luminescence with particular reference to CaS: BaS Cu mixed phosphors. University of Saugar.
6. Nihalani, Kartar Kimatrai. Some studies on penstock trifurcation branch plug and control structure in pressure tunnels. University of Poona.
7. Pimpale, Sitaram Govind. Studies on V-I characteristics in dark and under light in different gases under varying conditions. University of Poona.
8. Ray, Ananta Kumar. Analysis of ECG and electronic networks using Kron's method of approach and development of some bioelectric elements relating to human body. University of Calcutta.
9. Singhal, Murari Lal. Spectroscopic investigations in the chelates of platinum metals. Meerut University.
10. Tilak Raj. The emission of Li^8 fragments from interactions of K-mesons with emulsion nuclei. University of Jammu.

Chemistry

1. Abraham, K.I. Studies on plant proteases. University of Poona.
2. Agarwal, Jugal Kishore. Studies on the metal complexes of aminoglycoside antibiotics. University of Indore.
3. Astik, R.R. Studies on compounds with potential drug activity. Saurashtra University.
4. Bapannavadhanulu, Ammanamanchi. Analytical applications of oxazine dyes. Andhra University.
5. Belavadi, Vijay Kumar Krishnamurthy. Synthetic studies towards sesquiterpenes. University of Poona.
6. Bhattamisra, Sreelekha Dash. Influence of irradiation on the thermal decomposition of some solid substances. Utkal University.
7. Chandan Singh. Transformations in triterpenoids. University of Poona.
8. Dua, Satendra Kumar. Studies on some metal complexes of benzoyl hydrazones of aromatic aldehydes and ketones. Meerut University.
9. Ghosh, Sunanda. Phytochemical studies on Indian medicinal plants. University of Calcutta.
10. Gujarathi, Chandralekha S. Studies on bovine lung tissue factor (tissue thromboplastin). University of Poona.
11. Gupta, Mahendra Pal. Cation distribution in spinel type compounds by Mossbauer spectroscopy. University of Poona.
12. Jain, Chhote Lal. Electronic and magnetic properties of some metal chelates of 2-amino pyridine thiosemicarbazide and its substituted thiosemicarbazones. Meerut University.
13. Mathur, Bhagwan Behari Lal. Kinetics and mechanism of oxidation of amino acids by peroxydisulphate ion. Meerut University.
14. Mehta, S.H. Studies on properties of solution. Saurashtra University.
15. Modak, Harshvardhan Madhusudan. Synthesis of heterocyclic compounds. University of Poona.
16. Narasimha Murty, Yellajosula Lakshmi. New triterpenes from *Swietenia mahagoni* Linn. and chemical examination of *Nyctanthes arborescens* Linn. Andhra University.
17. Patnaik, Himansu Kumar. Stability and reactivity

of metal complexes in aqueous solution. Utkal University.

18. Ravi Satyanarayana Prasad. Studies in terpenes. University of Poona.

19. Shelke, Dnyanoba Narayanrao. Studies in metal complexes of some carboxylic acids. Marathwada University.

20. Shinde, Rana Manik. Hemoglobins in goats and antelopes. University of Poona.

Earth Sciences

1. Chacko, P.T. Roy. Structure and origin of the iron ore occurrence around Calicut, Kerala State. University of Kerala.
2. Subrahmanya, K.R. Structure, petrography and mode of emplacement of Arsikere granite. Bangalore University.
3. Subramanian, Sp. The geology around Nilakkottai, Madurai District, Tamil Nadu. University of Madras.

Engineering & Technology

1. Gujar, Shrikrishna Ganesh. Analysis of a lamella roof. University of Poona.
2. Narayanamurthy, V. Some analytical investigations on heat, mass and momentum transfer aspects of liquid films. Andhra University.
3. Patel, Suryakant Narsinhbhai. Behaviour of reinforced concrete deep beams in shear and flexure. M.S. University of Baroda.
4. Rajagopalan, Kadambi Sundarachar. Boundary shear distribution in stable channel section. University of Poona.
5. Sitaraman, T.S. Augmentation of mass transfer by coaxial string of spheres as internal in tubes and fluidised beds. University of Madras.

BIOLOGICAL SCIENCES

Biochemistry

1. Balasubramanian, A. Biochemical effects of acetylsalicylic acid (Asprin) and their possible mediations through prostaglandins. University of Calcutta.
2. Balasubramanian, M.K. Biochemical and hormonal studies on uterine neoplasm. University of Madras.
3. Chakraborti, Dipak. Studies on L-ascorbic acid metabolism. University of Calcutta.
4. Dawra, Rajinder Kumar. Cardiolipins as a transitory reserve of phosphatides. Punjab Agricultural University.
5. Ray, Panchugopal. Studies on the antimicrobial activity of some Indian plants. University of Calcutta.
6. Sinha, Achyutmohan. Biochemical studies on the antimetabolite resistance in *Vibrio cholerae*, University of Calcutta.

Microbiology

1. Kapre, Subhash Vinayak. Studies on the production of tetanus antitoxin from mules and horses. University of Poona.
2. Shinde, Vijayalaxmi Shankar. Part I-Studies on cross-compatibility between *Rhizobium japonicum* (Soybean cross-inoculation group) and *Rhizobium* species (Cowpea cross-inoculation group) associated with cultivated as well as wild legumes of the Maharashtra State; and Part II-Survey of the uncultivated wild legumes of the Maharashtra State for nodulation. University of Poona.

Botany

1. Bandyopadhyay, Sajoy Kumar. A study on host-rhizobium relationship in soybean. University of Burdwan.
2. Bhatt, Paresb Hariprasad. Induced growth and morphogenesis in cultured cells and tissues of *Ipomoea*. M.S. University of Baroda.
3. Deshmukh, Pramod Govind. Studies on new biologically active metabolites—cytochalasins 'H' and 'J' from *Phomopsis paspali* (SP No Vo): A fungal isolate of *Paspalum scrobiculatum* Linn. University of Poona.
4. Jain, Dhanesh Kumar. Morphological, anatomical and ontogenetic studies in *Bignoniaceae*. Meerut University.
5. Kameswara Rao, Chavali. Morphological, cytological and chemosystematic studies on some Indian *Galegeae* (Fabaceae). Andhra University.
6. Maitra, Prajna. Toxic effects of lead in germinating seedlings and other plant systems. University of Calcutta.
7. Mir, Ali Mohd. Plankton and water soils in relation to lake productivity. University of Kashmir.
8. Mohan Rao, G. Virus-vector-host relationships of rice tungro virus. Utkal University.

9. Pandey, Archana. Studies on morphogenesis of thermophilic fungus, *Rhizopus rhizopodiformis* (Cohn) Zopf. University of Saugar.

10. Sundari, Mantha. Cytological studies in some ceramiales (Rhodophyceae). Andhra University.

11. Suryanarayana, Manda China. Studies on bee botany and palynology of the flora of Coorg and adjacent parts of the Mysore State. University of Poona.

Zoology

1. Bhanot, V.M. Autecology and genecology of *cenchrus setigerus* and a comparison thereof with *cenchrus ciliaris*. Saurashtra University.

2. Chattopadhyay, Subimal Kumar. Some aspects of histology, histochemistry and bio-chemistry of the gastrointestinal tract of *Strongyluris bengalensis* Chakraborty 1936 (Nematoda: Heterakidae) with a note on its host-parasite relationship. University of Burdwan.

3. Kshirsagar, Harihar Sitaramrao. Studies on the morphology and biology of coccidia of some mammals. Marathwada University.

4. Saraf, Dinesh Kumar. Seasonal variations in the free amino acid contents of the various tissues of the fish, *Nandus nandus* and their correlation with glucose and cholesterol, their basic monthly cycle, experimental biosynthesis of cholesterol from dopamine. University of Saugar.

5. Subramania Pillai, P. Studies on the role of antigen binding cells in the immune response to sheep erythrocytes in the lizard, *Calotes versicolor*. Madurai University.

Medical Sciences

1. Krishnan, V. The role of pineal in the hypothalamo-hypophyseal gonadotropic axis: A histochemical study. Madurai University.

2. Namasivayam, A. Studies on the humoral control of hepatic regeneration. University of Madras.

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8. Kumaraswami, T. Studies on the interrelationships between certain okra varieties and the red spider mite, *Tetranychus cinnabarinus* (Boisual). Tamil Nadu Agricultural University.

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13. Thatte, Vishwanath Ramchandra. Studies on energy: Protein requirements for egg production in poultry. Punjabrao Krishi Vidyapeeth, Akola.

14. Thombre, Prabhakar Gopalrao. Inheritance of yield, yield components and morpho-physiological traits in wheat *Triticum aestivum* L. Punjab Agricultural University.

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1. Deo Kumar Singh. Studies on theileria annulata with special reference to its attenuation for immunization of calves. Haryana Agricultural University.

2. Dutta, Biraj Mohan. Studies on pathology of horn cancer in bovines. Haryana Agricultural University.

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INDIAN INSTITUTE OF TECHNOLOGY KANPUR-208016

Advertisement No. 12/78

Applications are invited for the posts of Assistant Professors and Lecturers in the Department of Chemistry of the Institute in the following pay scales:

Assistant Professor: Rs. 1200-50-1300-60-1900

Lecturer: Rs. 700-40-1100-50-1600

The department is seeking individuals with ability and aptitude for teaching in under-graduate/post-graduate programme and research and development in all the branches of Chemistry including interdisciplinary areas associated with Chemistry.

Number of positions available: Six
Qualifications for various positions
Assistant Professor

Doctorate degree with good academic record and at least three years of professional experience outside the work for degrees.

The candidates must have potential for independence in teaching and independent research work as demonstrated by adequate number of publications of good quality in journals of repute outside the candidate's own thesis, or equivalent development work done.

Lecturer

Doctorate degree with a good academic record and adequate research experience resulting in research papers of good quality.

Desirable Qualifications

Master's degree in Chemistry for all positions.

The Indian Institute of Technology, Kanpur has well equipped laboratories and central facilities. The Institute has a large computer centre with IBM 7844, IBM 1401, IBM 1800, PDP-1 systems with interactive graphic terminals and TDC-316 and a group of experienced programmers. The Institute has a well stocked library with more than 150,000 volumes and 1,300 periodicals. The central facilities include 2 MV Van de Graaff accelerator, 4096 multi-channel analyser and other radiation detection equipment, liquid nitrogen and liquid helium plants, NMR, EPR, Mass Spectrometer, X-ray plant, UV and IR spectrometers, glass blowing shop, crystal growth facility, central instrumentation laboratory, precision machine shop, electron microscope besides a large workshop for fabrication of specialised research apparatus.

There is an Advanced Centre for Electronic Systems at the Institute. The Centre has been sponsored by the Ministry of Defence to carry out training and unclassified research and development work in the areas of communication and radar. Besides, an Advanced Centre for Materials Science has been established recently at the Institute by the Government of India to undertake research in the frontiers of development on materials of national importance.

The campus facilities include a Primary and Higher Secondary School, a Health Centre and Shopping Centre.

Posts are permanent and carry retirement benefits in the shape of CPF Scheme or CPF-cum-Gratuity Scheme or GPF-cum-Pension-cum-Gratuity

Scheme as may be opted according to rules. The age of retirement is 60 years. During the first year, the appointment will be on probation. Besides pay, posts carry allowances according to the Institute rules, which at present correspond to those admissible to the Central Government employees stationed at Kanpur. Higher initial pay is admissible to exceptionally qualified and deserving candidates. Candidates called for interview will be paid second class railway fare from the place of duty to Kanpur and back by the shortest route.

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Applications from within India must be made on prescribed form obtainable free of charge from the Registrar of the Institute by sending a self-addressed unstamped envelope of 25 cm x 10 cm size. Applications should be accompanied by a postal order for Rs. 7.50 (1.87 for SC/ST candidates).

Applicants who are employed in a Government/Semi-Government organizations or Institutions should send their applications through proper channel, else they will be required to produce a 'No Objection' certificate from their employers at the time of interview.

Applicants from abroad may apply on plain paper enclosing a complete bio-data and names of three referees from whom reference letters may be obtained.

Applications should reach the Registrar, Indian Institute of Technology, IIT Post Office, Kanpur-208016 on or before June 30, 1978.

UNIVERSITY OF BOMBAY Department of Physics

Applications are invited for the post of Lecturer in the University Department of Physics in the grade of Rs 400-40-800-50-950 (to be revised as per the U.G.C. scale of pay viz. Rs 700-40-1100-50-1600). The post carries the benefits of Provident Fund and Dearness Allowance and House Rent & Compensatory Local Allowances at the rates sanctioned by the Executive Council from time to time. A higher starting salary may be given to a person possessing high qualifications. The appointments will be on probation for two years in the first instance. Other things being equal preference will be given to a candidate from backward class. The post is reserved for a candidate belonging to scheduled caste or scheduled tribe and will be filled up by appointment of such person only as shall satisfy the requirements regarding qualifications, experience etc. laid down for the post, provided however that if no candidate is available from the scheduled caste or scheduled tribe, the post will be filled up by appointment of duly qualified person from among other applicants.

Candidates should possess (a) A doctor's degree in Physics or published work of an equally high standard; and (b) Consistently good academic record with first or high second class (B+) Master's degree in the subject with

specialization in Physics of Electronics and Solid State Devices.

Post-doctoral research/Teaching at Post-graduate level in the above-mentioned special subject will be considered as additional qualifications.

Two copies of the application in the prescribed form, which can be had from the Registrar, should be submitted so as to reach the Registrar, University of Bombay, Bombay-32, on or before 10th June 1978.

Candidates called for interview will have to present themselves at their own expense.

Canvassing direct or indirect will be a disqualification.

K. S. Kolge
OFFG. REGISTRAR

MADURAI UNIVERSITY Institute of Correspondence Course and Continuing Education Admission Notification

The Madurai University provides instructions by correspondence for the—
Pre-University Course

(Tamil and English Medium)
B.A. and B.Com. Degree Courses
M.A. Degree Course in Tamil, English, History and Economics
M.Com. Degree Course and
B.G.L. Course

These courses are open to students from all over India.

Details and particulars regarding the above can be had from the Director, Institute of Correspondence Course and Continuing Education, Madurai University, Palkalai Nagar, Madurai-625 021 on request with a self-addressed and stamped (25 Paise) envelope. The envelope should be of 22cm. x 12cm. in size. Requests for particulars without self-addressed and stamped envelope will not be entertained on any account.

DIRECTOR

UNIVERSITY OF JAMMU Situations Vacant

Applications on prescribed form are invited for the following posts so as to reach the Registry on or before June 20, 1978.

1. Reader in Commerce (1200-1900) (Two)
2. Lecturer in organic Chemistry (700-1600) (One)
3. System Manager (1100-1600) (One)
4. System Engineer (1100-1600) (One)
5. Programmers (700-1300) (Two) or (540-950) (depending upon the qualifications and experience.)

The posts at S. No. 3 to 5 are for the Computer Centre of the university.

For full details and prescribed application forms please apply by sending a self addressed envelope of 25cmsx10 cms size bearing stamps worth Re 1.50 paise along with a crossed postal order for Re 1/- drawn in favour of the Registrar, University of Jammu, Canal Road, Jammu (Tawi) 180001, J & K State cashable at Jammu post office.

K. K. Gupta
REGISTRAR

University News

A CHRONICLE OF HIGHER EDUCATION & RESEARCH JUNE 1, 1978 80 PAISE

**Educational Psychology
in India
Evaluation System in
10 plus 2**

● **Student Involvement in
the National Adult Edu-
cation Programme**



Vice-Chancellors of Agricultural Universities at a meeting with the Prime Minister, Mr. Morarji Desai, in New Delhi (Report on page 968)

MADURAI UNIVERSITY
Notification No. 2/Advt./V/78

Applications in the prescribed form are invited in the University for the following posts :

School of Biological Sciences

One Professor in Plant Morphogenesis/Environmental Physiology.

One Reader each in Cell Biology, Reproductive Biology/Plant Genetics, Immunobiology, Bio-Chemistry, Plant Physiology (temporary); Microbiology, Environmental Biology.

One Lecturer each in : Animal Physiology, Botany, Molecular Biology, Plant Ecology, Plant Physiology, Plant Genetics, Human/Population Genetics.

School of Mathematical Sciences

Three Readers in Mathematics (one post temporary)

Two Lecturers in Mathematics

Department of Economics

One Reader in Econometrics

Two Lecturers in Economics

School of Historical Studies

One Professor of Ancient History

One Reader in Medieval History

One Lecturer in Medieval History

Scales of Pay

Professor—Rs. 1500 - 60 - 1800 - 100-2000-125/2-2500

Reader—Rs. 1200-50-1300-60-1900

Lecturer—Rs. 700-40-1100-50-1600

Higher starting salary will be offered in deserving cases.

Preference would be given to Scheduled Caste/Scheduled Tribe candidates who are considered fit in respect of Lecturers.

A minimum of ten years' teaching experience for Professors, five years teaching experience for Readers and three years' teaching experience for Lecturers at the post-graduate level is essential.

The prescribed form of application and full details regarding qualifications, field of specialisation and experience required can be got from the undersigned on requisition accompanied by (1) a self addressed envelope with postage stamps to the value of 0.70 paise affixed thereon and (2) State Bank of India Challan for Rs. 5/- (Account No. 1) or Demand Draft for Rs. 5/- payable at Madurai drawn in favour of the Registrar, Madurai University, Madurai-625021

The last date for receipt of applications is 15th June 1978. Applications received after the due date will not be considered.

B. Murugan
REGISTRAR

AWADHESH PRATAP SINGH
VISHWAVIDYALAYA
REWA (M. P.)

No. Dev. /III/58/78/957
dated 19 May 1978

ADVERTISEMENT

Applications in the prescribed form are invited for the posts of 1 Reader

and 2 Lecturers in the Department of Economics so as to reach the Registrar, A.P.S. University, Rewa on or before 19th June 1978. Each application should be accompanied by a crossed Indian Postal Order for Rs. 10/- (Rupees Ten only) payable to the Registrar, A.P.S. University, Rewa.

Scale for Pay

Reader—1100-50-1600

Lecturer—620-40-900-50-1400

Qualifications

(A) The candidates for all the above posts should possess a 1st or 2nd class Master's Degree of an Indian University or an equivalent qualification of a Foreign University in the subject concerned with at least 50% (B in the seven point scale) in the subject concerned and a Doctorate Degree.

(B) At least 50% marks at the Higher Secondary/Intermediate/Pre-University Examination as the case may be.

(C) At least 50% marks in the Bachelor's Degree examination on the basis of which division is awarded at the degree level by the University, and N. B. The requirement regarding minimum percentage of marks shall be relaxed upto 5% in case of Scheduled Caste/Scheduled Tribe candidates.

(D) Teaching experience of 5 years and 3 years experience of guiding research is essential for the post of Reader.

(i) Knowledge of Hindi shall be a desirable qualification for the above posts.

(ii) Experience of teaching Degree/Post Graduate classes will be a desirable qualification for the posts of Lecturers.

Provided that, if the Selection Committee is of the view that the Research work of a candidate as evident either from his thesis or from his published research work is of very high standard it may relax any of the qualification prescribed in B to D above.

Specialization

The candidates should be specialized in Business Economics, Econometrics or Advanced Statistics.

2. The above pay scales carry with them dearness allowance and the benefit of contributory provident fund and other allowances in accordance with the rules of the University.

3. Applications should be made on the prescribed form obtainable from the University Office on payment of Rs. 5/- (Five only) in the shape of a crossed Indian Postal Order payable to the Registrar, A.P.S. University, Rewa.

4. Candidates already in service should apply through proper channel.

5. Candidates selected for interview will be required to travel at their own expenses.

6. The University reserves the right to fill up or not to fill up the posts advertised and/or to call only selected candidates for interview.

7. The candidates already applied previously in response to the advertise-

ment No. 5861 dated 14th October 1976 need not apply again.

8. 25% seats are reserved for Scheduled Caste/Scheduled Tribes candidates. But, if no candidate is found suitable, the posts will be filled up from amongst general category.

REGISTRAR

THE UNIVERSITY OF BURDWAN
RAJBATI : BURDWAN
WEST BENGAL

Advertisement No. 2/77-78

Dated 10th May, 1978

Applications in the prescribed form are invited for the following teaching posts in the approved scales of pay viz. Reader—Rs. 1200-50-1300-60-1900/- and Lecturer—Rs. 700-40-1100-50-1600—with allowances and other benefits as per University Rules.

A. Department of Law

(i) Reader—2

(ii) Lecturer—2

B. Department of Bengali

(i) Reader—1

C. Department of Sanskrit

(i) Reader—1

D. Department of Library Science

(i) Lecturer—1

Minimum Qualification

1. (a) A Doctor's Degree or published research work of an equally high standard and

(b) Consistently good academic record with 1st or high 2nd Class (B in the seven point scale) Master's Degree in the relevant subject or an equivalent degree of a foreign University.

2. Additional Requirements

For Readership

(i) At least five years' teaching experience in post-graduate Class;

(ii) Ability to supervise Research Work;

(iii) Publication of sufficient merit.

Desirable Qualification: Specialisation or Proficiency:

For A : Any major branch of the discipline of Law.

For B : Any major branch of Bengali Language and Literature.

For C : Veda/Literature/Indian Philosophy.

The University Council may, on recommendation of the appropriate Selection Committee, waive any of the requirements in view of the candidate's specialised knowledge in the subject. The choice of the Committee need not necessarily be confined to those who apply formally. Those who applied earlier for the post of Lecturer in Library Science need not apply again.

For application form and other information apply to the Registrar with a self-addressed stamped (0.40p.) envelope (9" x 4").

Last date for submission of application with the requisite fee of Rs. 5/- is 10th June, 1978.

A.K. Chaudhuri
REGISTRAR

UNIVERSITY NEWS

Vol. XVI
No. 11

JUNE 1
1978

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*Opinions expressed in the articles
and reviews are individual and do
not necessarily reflect the policies
of the Association*

Hony. Editor : ANJNI KUMAR

Educational Psychology in India

E.G. Parameswaran*

Educational psychology is probably one of the earliest branches of applied psychology to be included in the curriculum of the Indian universities. Invariably educational psychology has been one of the core areas of instruction at the B.Ed. level. At the M.Ed. level also it has figured as either a compulsory requirement or a major optional area. In addition, different aspects of educational psychology, like group dynamics, tests and measurement, guidance and counselling, etc. have figured as separate optional papers. However, notwithstanding its early entry into the portals of the university, this branch has very much lagged behind other branches, like industrial psychology, clinical psychology, etc. in almost all aspects—research, professional training, practical applications and even publication of books. Whereas the Indian psychologist in the industrial field or clinical field has kept himself in the race with his counterparts in the other countries, the same cannot be said of the educational psychologist in India.

At this point, one may even raise the question as to whether there are any psychologists in India who could be called educational psychologists. By and large, perhaps, with a few exceptions, educational psychology has remained confined to teacher training institutions or university departments of education. University departments of psychology have evinced little interest in psychological problems of educational implications. No doubt research in the area of motivation, learning, perception, group behaviour and even in testing carried out in the departments of psychology have an implication for education. But this research has by and large failed to bring out and focus the implications for education. It is ironical that while most of the data have been collected from high school or college pupils, the approach of the investigations has been mostly from the point of view of one or other of the general theories of motivation or learning or perception, etc. If in this research the contextual variables and objectives had been taken into the account, it would not have been very difficult to draw inferences about the applications of the findings for the educational situation. In short, educational psychology as a branch of applied psychology has remained a very low priority area among psychologists if not totally neglected.

We may turn our attention to see how educational psychology has fared in teacher training institutions. Perhaps the conditions are not much better. The subject has been taught as an entirely academic discipline. Very little attempt has been

*Osmania University, Hyderabad.

(Continued on page 964)

Student Involvement in the National Adult Education Programme

P.T. Kuriakose*

Before one can adequately deal with the question of student participation, it will be worth while to be clear about our understanding of adult education. In the past there has been in our country a great deal of misunderstanding about the true meaning of adult education. Even the policy statement issued by the Government is not free from some ambivalence on this account. The question one has to dispassionately discuss is not whether government's commitment to adult education is genuine but rather whether this commitment is based on a full appreciation of the implications of a genuine adult education programme. There is reason to believe that such an appreciation has not taken place. It appears that the political authorities, reflecting their own sincerely held opinions, took the political decision to launch what they understand as an adult education programme and the very competent officials of the Ministry have followed up that political decision with dedication and earnestness. In the normal course this is a healthy situation but the problem arises because most politicians' perception of adult education is somewhat different from what it is today generally understood to be. They see adult education mainly as adult literacy. To them literacy is the most important thing in the world because it is supposed to open up one's otherwise closed mind to new vistas of knowledge and consciousness. This is, as is well known, an over simplified view of adult education.

It is not as if the Janata Government has produced an adult education programme out of the blue. This country has had such a programme for several years. Other countries in Asia, Africa and Latin America, have also acquired a fair amount of experience. What do their experiences indicate? The answer has been provided by Prof. Alberto Maida, former Director General of Rural Education, Bolivia and currently a UNESCO expert in adult education. He says: "In attempts to solve the social problem, it has been usual to organise literacy courses of a traditional kind, including instruction in reading, writing and numeracy. More recently, it has recognised that these traditional methods are not adequate to deal with the problems of ignorance, poverty, disease, etc. still confronting modern society. All those people who did complete a literacy course upto standard equivalent to about three years' primary education were merely turned into functional illiterate." This country's experience with adult literacy programmes has been one of painful failure. Indeed the widely publicised farmer's functional literacy programmes were an outcome of the futility of mere literacy programmes as such. It will be unfortunate, if we do not learn from our own experience of the past.

* Director, Vishwa Yuvak Kendra.

Our adult education programmes, therefore, will have to go beyond a programme of literacy. Whatever may be the ultimate value of literacy in raising levels of living in a society, we must recognise the unpleasant truth that for the vast mass of our poor people what matters is the immediate present in the shape of bread and butter rather than the unknown prospects of a distant future. In other words, there is today no wide spread demand for literacy among the adult population of India. What they may buy is not literacy but education in the true sense of the term. It is education to equip them to handle their daily needs of life as perceived by them that they are after. They will accept our adult education programmes only when they see in such programmes the possibility of reasonably immediate gain in terms of more income gained directly or through the acquisition of a marketable skill. If literacy helps them in this quest they will buy the programme; otherwise they will turn their backs on it.

Functional literacy programmes have been more successful than literacy programmes because learners could expect some immediate monetary benefits for themselves. Unfortunately, functional literacy programmes can have only a limited success in this country because the programme will appeal only to those who are already employed or expected to be employed in the near future and therefore, live in the hope of making use of their additional qualification gained through functional literacy programmes. Here lies the crux of the problem of adult education in India. A huge number of the prospective learners are either totally unemployed or are greatly underemployed and have little hope of improvement in their condition. Because of this advance knowledge that in spite of going through a functional literacy programmes, they are unlikely to find employment, the incentive to join the programme is and will continue to be minimal. Experience of many who have in the past participated in functional literacy programmes has been that they could not increase their earning capacity because of external constraints such as inability to control the market mechanism or to raise the prices of their products etc. This too acts as a disincentive.

The fact is that an adult education programme in India has to be much more than a literacy programme functional or otherwise. It has to be a true educational programme of the individual in relation to his community, its economic and political relations and his own dependence on that community. In the process of his learning, he will discover how his own economic viability is inter-linked to the economic situation of his own neighbourhood and its economic and political power equations. The moment a significant number of poor deprived people become aware

of the situation in their neighbourhood tension is bound to be generated. That is why great adult educators like Paulo Freire have said that awareness building and tension creation are integral parts of adult education, something to be actively encouraged if adult education is to be really purposeful in a society heavily bound down by exploitation of different sorts. Those who have prepared the draft policy statement are aware of this dilemma and hence the resounding assertion in the statement "that the illiterate and the poor can rise to their own liberation through literacy dialogue and action"

Several questions arise. Does it mean that the Government will actively encourage a massive and country wide conscientisation programme among the illiterate poor masses for their "liberation" which is bound to result in agrarian, labour and other forms of social and political conflicts leading even to violence? Governments usually like to preserve law and order and would not encourage disruption of law and order. If our Government intends to do that, it may be a gigantic step but none is likely to be persuaded to believe that this will happen. Governments are not known to champion and promote tension and conflict. We know what happened in Kerala and West Bengal when the Marxists Governments there asked the police not to intervene in agrarian and labour disputes.

For the implementation of the programme Government intends to deploy thousands of university students. If we agree with the earlier analysis that a true adult education programme is much more than an adult literacy programme, then literacy will come only as the third or fourth step in an adult education programme. One will have to ask seriously at what stage can university students become adult educators. This is not the place to analyse the implications of a properly conducted adult education programme. Yet those who have been actively engaged in adult education programmes know that in the initial stages one has to deal with people with extreme sensitivity, great care and understanding and above all maturity. It is not that university students are incapable of providing these but only a very small number of students can be expected to possess the qualities of head and heart which will enable them to function as adult educators. In our society we have always had a few such students. Will this be enough for implementing such a massive campaign as we propose to do? No, we will need many more such students. They do not emerge without encouragement and motivation. Who is going to provide this? Where are we going to find those who will encourage and motivate thousands of students? Who is going to train them on a continuous basis?

One of the major inadequacies of the present scheme is that it relies heavily on students but not on colleges. The emphasis should shift from students to colleges. The commitment to the scheme must come from the institution. Genuine student involvement in adult education programmes will throw up several problems both inside the college and outside in the community.

Students by themselves will not be able to deal with these problems. It is the college which can deal with them more effectively. When one speaks of the involvement of a college it means the total institution—management, faculty and students. One of the major draw-backs of the National Service Scheme is that it has not been accepted by most colleges as their own programme but rather as a Central Government programme being implemented by them. The commitment to NSS or what it stands for is only of few students and perhaps of the teacher incharge but not in most cases of the college or of the entire faculty. Such commitment on the part of the college to adult education will come only when the college itself sees that it has a responsibility to the community, a commitment which transcends its commitment to the students it has within the college. It is this larger vision of a college's responsibility to the community around it that is significantly lacking in most of the institutions of higher learning in the country. In such a situation to expect a few students to carry the principal burden of adult education will be bordering on unrealism. The National Adult Education Policy would do well to devise measures to bring about this reorientation in the attitudes of college managements.

Managements form only one part of the college community. Teachers are also as much a part of this community. So far efforts have been in the direction of identifying one or two teachers who take interest in NSS or other social service activities. This will not be enough. Utmost priority has to be given to orientation programmes for the entire teaching community in the college even if only one or two teachers are given more operational responsibilities. Indeed without the active support of the entire teaching staff of the college, the teacher incharge will not be able to mobilise the maximum number of students or the college itself. The college may be called upon to make adjustments in its schedules. It may also have to give allowance to student participation in activities other than literacy programmes. Such participation may challenge the college authorities. It may also involve the college in changing its own policies. The need to involve the faculty much more than at present arises also from the fact that students form a floating population in any college and if an adult education programme is to be effective it must have a fair degree of continuity which only the staff will be able to provide.

From what has been stated above it is clear that there are some reservations about the possibility of involvement of students on a big scale to implement a real adult education programme. Students can play a major role in a literacy programme per se but literacy will be the third or fourth step in an adult education programme. If we make an effort to involve the college community the success of the programme will be greater. Otherwise we will find at the end that we have organised a massive adult literacy programme and not a adult education programme.

Let us remember that adult education pro-
(Continued on page 964)

Evaluation System in 10+2

Lokesh Koul*

In order to link education with economic growth and to improve the quality of education, the Education Commission (1964-66) recommended educational reconstruction by introducing broadly uniform pattern of 10+2+3 throughout the country and reorganising curricula at all stages of instruction. The recommendation was accepted by Government of India and received further applause from All India Forum such as the Conferences of Education Secretaries and Directors of Education, Conference of the Chief Ministers and Education Ministers of the States, the Inter-University Board and the Conference of the Boards of the Secondary Education in India. Accordingly, the Central Board of Secondary Education of India, and some State Boards decided to introduce the new pattern of education. The Union Ministry of Education and Social Welfare has issued a brochure entitled "A Major Change in School Education" outlining the board features of 10+2+3. Under new pattern two distinct stages have been visualised, one upto class X and the other upto class XII, both forming part of the school education. For the first stage up to class X, the Education Commission has recommended an undifferentiated course of 'General Education' for all, without any diversification of studies, to promote harmonious development of the students. The Commission was of the view that by the end of first 10 years of schooling the special interests and abilities of the students would have been generally discovered. It, therefore, recommended a diversified education coupled with vocational education for the subsequent classes of XI and XII. In the new pattern a minimum essential core of knowledge, for promotion of intellectual capacities, has provided by way of teaching subjects like languages, mathematics, sciences and social sciences. For fuller development of the physical, emotional and other aspects of the pupil's personality, provision has been made for work experience, community service, health and physical education and other activities. In their comprehensiveness the syllabi will provide a wide range of information to develop students into well informed citizens. Emphasis will be laid on making knowledge as relevant to life by weaving the course contents around day-to-day problems and experiences. In social sciences, simple project work will be introduced to make the knowledge functional and more relevant to the surroundings the students live in.

The goals of national integration, training for

democratic living, co-operativeness, cultural and religious tolerance shall be duly emphasized in the course of languages and social sciences. Important developments in the respective areas shall find their place in the course contents of different subjects.

A significant feature of the new course is to provide opportunities to students to be productive and self-reliant by introducing 'work experience'. The main functions of the work experience will be to inculcate among students the fundamental values of dignity of labour, a spirit of nationalism and social responsibility. The important areas to which work experiences relate are engineering, agriculture, domestic science, commerce, fine arts, and other trades which have great utility in domestic and other areas of work.

In the new pattern the broad objectives of general education are spelt out in terms of stage-wise and subject-wise objectives for the guidance of educational planners, administrators, supervisors and teachers. In accordance with the spirit of these objectives the system of evaluation and assessment has to be modernised and simplified to improve both the quality of testing and the standards of teaching. The new system of evaluation should give reliable and concrete evidence of the attainment of specific objectives formulated for the entire course of studies. In the present system there is an annual examination covering all the courses. It induces the child to cram a large mass of half digested information in a short time and thereafter forget it conveniently. The System has a crippling effect on the physical, mental and moral capacities of students and has resulted in the lowering of academic standards, weakening of discipline and use of unfair and immoral means. What is therefore, needed is to bring out clearly the specific goals of education in the form of expected outcomes, offer courses of studies in the form of sequences of units. Each unit could then be evaluated separately thereby reducing the burden of the examination at the end. The necessary variety of tools and techniques should be employed to evaluate not only the performance of the learner but of the process itself. The deficiencies discovered must be removed as far as possible by the remedial courses rather than 'failing' students by way of punishment.

At the primary stage, children are young and sensitive, and so on rigid system of evaluation is proposed on them at this stage. Evaluation has to be integrated with the process of learning and growth. A system of continuous recording of the progress and

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development of each child, on the basis of observation and oral tests, has to be devised. Promotion should not be based only on the annual examination at the end of each year, but on the record of progress as registered over the session. Special attention in the form of remedial instruction should be given to those children who do not show adequate progress, and particularly to those belonging to the backward section of society.

From the middle stage onwards, the written examinations should form an integral part of the system for evaluating the achievement of students in different subjects areas. But they should not be the sole criterion of testing. Practical tests, observation, check lists, oral examination and evaluation of pupil products may be used in addition as tools and techniques of evaluation. Education Commission (1966, P. 243) has also pointed out that there are several important aspects of the student's growth that can not be measured by written examinations, and other methods such as observation techniques, oral tests and practical examinations have to be devised for collecting evidence for the purpose. In the new pattern continuous integral evaluation of the development of the pupils in all aspects should be regular feature and the annual examinations will not have an unduly greater weightage than the other assessments made during the year. The emphasis should not be on the formal tests for "pass or fail" in aggregate. The "pass-fail" system will be done away with and not student be declared as failed. Instead, all students will be certified as having completed the requisite number of years of schooling and graded, in each subject from 'poor' to 'excellent' with presumably 'satisfactory', 'good', 'very good' constituting in between grades. The relative ranking of students in terms of grades instead of a percentile bases of awards on a 101-point scale may prove to be more objective and realistic. The ranking on a 101-point scale seems to be unrealistic because it is very difficult to discriminate between the finer points on such a scale. Finer distinctions, as Anastasi (1968, P. 49) has put it, are unrealistic and likely to add only chance variance to the judgments. The ill effects of numerical ranking are legion and the system has done incalculable harm to innumerable students.

The students' cumulative assessment in each subject should be placed on record and given to each student. A record of such assessment may cover both scholastic and non-scholastic areas, and be without any aggregate. The pupils should have a knowledge of the results of their learning. Evidence indicates that when students are aware of their learning progress, their performances will be superior to what it would have been without such knowledge (Harris, 1960, P. 857).

For the work experience and community service, health and physical education, assessment should be continuous and internal which may be based only on practicable followed by oral tests of short duration.

Another important step in the system of evaluation is to improve the quality of tests and examinations. It includes orientation and training of paper-

setters and evaluators through seminars, in-service education programmes, workshops, contact courses and summer institutes. It will help in improving the quantity of question and question papers, doing away with overall options in question papers so as to eliminate selective study by pupils, introducing short answer questions to have a wide coverage of syllabus, and providing marking schemes to the examiners. Most of the defects in the present system of examination are due to shortcomings of question and question papers, sketchy scheme of marking, ambiguous general and specific instructions issued to the examiners and examinees. The study carried out by Gayen and others (1962) has shown considerable defects in the framing of questions and question papers. The Education Commission (1966, P. 246) is also of the opinion that no major breakthrough towards improvement of examinations is possible unless the nature of questions asked is improved. On the basis of the results of the researches (Harper, 1960; Singh, 1970, Koul, 1974, 1974 a, 1974 b), it may be said that the inter-examiner reliability of the essay-type tests can be increased significantly by making the task of examinees and examiners well-defined, which could be made possible by making the language of the questions more specific, precise, pinpointed and understandable to the examinees. Moreover, the instructions issued to the examinees in the form of 'note' can be modified by instructing the examinees clearly not to write anything less or more than what has been asked in the question.

Under the new pattern as pointed out by Singhal (1975), the evaluation has to be a part of the educational process. It has to serve as a reliable tool of feedback. The results have to be utilized to provide remedial teaching for the weak students; for the bright and gifted more challenging programmes have to be provided. The evaluation should also be utilized by teachers to improve their teaching methods. It is only then that the system of evaluation will serve its real purpose. □

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Educational Psychology in India

(Continued from page 959)

made to integrate the theoretical training in educational psychology with the practical problems of classroom teaching. Even a look into the syllabi of educational psychology and textbooks used will confirm this view. One finds that the syllabi in educational psychology at the B.Ed. and M.Ed. levels is very largely like syllabi in basic general psychology. The textbooks used naturally follow the pattern of the syllabi. This is because these books are written according to the existing syllabi and not according to the developments in the field. The textbooks are therefore, to a considerable extent outdated and classical, in addition to being theoretical. Further both the syllabi and the textbooks have adopted the model of 'Individual Psychology', the emphasis being on the structural and static characteristics of the individual. The implications of modern field theory, social psychology and even organisational and clinical psychologies remain largely neglected. In brief educational psychology has remained 'status oriented' rather than 'process oriented', 'historical' rather than 'contemporary'.

We now turn our attention to research in the field of educational psychology. One often wonders whether the subjects chosen are relevant at all for our educational problems. Subjects like 'superstitions of college students' are an example. From the point of view of professional training the picture is much worse. The educational psychologists have several professional possibilities like school psychology, students counselling, remedial teaching, talent and creativity study, school or college management, etc. Educational psychologists in India are very conspicuous by their absence in these fields. However, in recent years there is a trend emanating from psychologists primarily concerned with industrial organisations to extend their field of application to the educational setting though it is too early to make any assessment of this. But this trend must be welcomed as it will have an invigorating impact on the field of educational psychology. At this point one may indulge in idle curiosity as to whether it may not be a bad idea to give up the classical label of educational psychology. It is a pity that labels often take on restrictive meanings. Perhaps, the word educational psychology has on the one hand led to an attitude among psychologists that this field is not their concern, but of those more directly connected with education. The latter on their part, while they have been too willing to accept their own jurisdiction have not felt the responsibility. In the area of industrial psychology one can see an emerging trend to prefer terms like organisational behaviour or organisational psychology or human resources management. Perhaps such a renaming or a redefinition may be helpful as this would bring educational psychology to the attention of psychologists in general and help the subject to get out of the situationally imposed restrictions in the discipline of education.

The emergence of areas like adult education,

continuing education, non-formal education, etc. point to the necessity imposed on educational psychology and also the general field of psychology to shed some of their inhibitions and reservations. The non-educational psychologists can no more afford to shirk their responsibility towards the study of psychological problems of education because whatever be his context of interest he has to reckon with the educational process. Educational psychology cannot be dismissed as a secondary branch in the field of education. Teacher trainers on the other hand can no more assume that they alone have the jurisdiction over educational psychology and can afford to keep it backward. There appears to be a need to develop a branch of professional psychologists interested in the area of education far beyond the classroom situation. Classroom pedagogy may be a sadly neglected aspect of educational psychology but it is not the only aspect and even there the educational psychologists cannot afford to have a sterile classroom psychology.

Educational psychology in India, today is unfortunately sterile in terms of teaching, research and professional applications. Psychologists, interested in education have to take their lessons from their counterparts in industrial and clinical areas. They have to initiate and promote research, integrate their own researches with researches in other areas and, if necessary, evolve new concepts and professionalize themselves. Educational psychology syllabi have to be reoriented in the direction of practical problem solving. The highly individualized and 'status orientation' should give place to 'interactional and problem orientation'. Educational psychology must be accepted as a legitimate concern by the general body of psychologists and the educational psychologists in teacher training institutions must broaden their vision. □

Student Involvement in the National Adult Education Programme

(Continued from page 961)

grammes call for highly motivated volunteers and if we want to have a big campaign we need huge numbers of them. Unfortunately, such educated men are not mass produced. Let us not worry about numbers. It is more important to have a smaller number of the poor properly educated to understand their own destiny and that of their neighbours. Let us not pressurise our officials to produce inflated statistics but help them to encourage volunteers and other organisations to commit themselves to this challenging task. Simultaneously let us give much greater attention to the educational needs of our children and make sure that they not only remain in schools and not drop out but also become aware of the situation around the country for they shall be the heroes of the future. □

Platinum Jubilee of National Library

(From our Calcutta Correspondent)

The Calcutta Public Library was founded in 1835. Together with several other collections, it was merged in 1903 in the Imperial Library which was reborn in 1948 as the National Library. The library could have chosen a far longer lineage, but on the twenty second and twenty third of April 1978, the library celebrated its platinum jubilee.

Dr. Pratap Chandra Chander, Union Minister for Education delivered the inaugural address at the platinum jubilee celebrations of the National Library. He said that the Centre was thinking of passing a special legislation for the National Library or a comprehensive law covering all public libraries. Referring to the National Library Act, 1976, he said that the Janata Government decided not to enforce the Act. The reason underlying this statement was that it was passed despite protests from intellectuals, specially in the Eastern Region, and employees of the Library.

The Centre was eager to help those State Governments which had passed Library laws since Libraries as a law or movement came under the State List.

Dr. Chunder, called upon small newspapers and periodicals to reserve columns for "neo-literates" to help the Government in implementing its mass literacy programme. Apart from spreading basic textual knowledge, this would widen their readership.

Dr. Chunder affirmed that the Janata Government's policy was to lay stress on primary education. Apex organisations like the National Library with the aid of a chain of other public libraries could undertake the task to disseminate knowledge. He hoped that the National Library would guide the library movement, so that the benefits could reach not only a 'privileged class' but the common man as well.

The Education Minister unfolded that the Centre had sanc-

tioned a new building for the National Library with an area of about 200,000 square feet. "Genuine and constructive criticism" against the library's shortcomings would be welcome", but imaginary criticism "would be self defeating", he added.

Mr. Jyoti Basu, Chief Minister of West Bengal, who was the Chief Guest was pleased to say that the library employees in their representations had shown a keenness to implement the literacy programme. He thanked the British rulers who were 'unconscious tools' in founding the library and brought about a socio-political awareness among the people.

Mr. Sankar Prasad Mitra, Chief Justice, Calcutta High Court, in his presidential address said that the library was associated with intellectuals of the 18th and 19th centuries. The library should be used by scholars and research workers. Learning should not be 'disturbed' by undergraduate students.

Mr. B. S. Kesavan, librarian from 1948 to 1963 was the special guest. It is much the love for men as for book, that makes a good librarian, was his definition of a librarian. Mr. Kesavan also presided over a seminar on 'The idea of a National Library'. The seminar was a fraction of the platinum jubilee celebrations. He said that in our country there is no centre and no periphery' and hence there was no reason to shift the library from Calcutta to Delhi. Stressing the need for the library to have an "international look" he said that "National Library Planning is no longer a domestic affair. The world in a way has shrunk but, it has also proliferated not merely in numbers of people but in a way of units of information. Information is international in quality. This does not mean abolishing cultural entity. It means affirmation of such as entity as collateral to

cultural entities all over the world."

Mr M. M. Chakraborty, Vice Chancellor of Vidhan Chandra Krishi Viswavidyalaya, Kalyani, said that co-ordinating the functions of other libraries, the National Library can fulfil the role of a mother library. Mr. Ashim Kr. Dutta, Head of the Department of Library Science, Jadavpur University said that it was essential that the National Library had every book and periodical published in India. It was equally important that any foreign publication that referred to India or its customs, traditions or institutions should find its place in the shelves of the library. He also voted for a network of branches for 'casual readers.' Only serious students should make use of the National Library. Mr. P. B. Mangla, Head of the Department of Library Science, Delhi University, opined that the library ought not to lend books.

The Book Exhibition organised by the National Library is another unique celebration of its 75th anniversary.

The library has in its possession about 1,650 books printed before the 18th century of which 350 were printed prior to the 17th century. A select number of these books are on display. Among these collections are "Nathaniel Brassey Halheads", "A Grammar of the Bengali language" (1778), a 1802 translation of the Mahabharata by Kashi Ram Dass, and "A dictionary in English and Bengali, translated from Todd's edition of Johnson's English Dictionary by Ram Comel Sen (1834).

The exhibition also features, Ram Mohan Roy's letters to the editor of the Times, the letters of Tej Bahadur Sapru and books from Sri Jadunath Sircar's private library.

The National Library has grown since 1948 and possesses two million volumes of books on thirty miles of shelves, 18,000 periodicals, 72,000 maps, more than 5,00,000 official documents and 3,000 volumes of manuscripts. There are 18,000 holders of reading room tickets and 26,000 borrowers.

ICAR Chief's call to Farm Varsities

The role of agricultural universities in achieving the objectives of Sixth Five Year Plan was stupendous, observed Dr. M.S. Swaminathan, Director-General, Indian Council of Agricultural Research.

He was addressing the staff and students of the Andhra Pradesh Agricultural University (APAU) and Scientists from other institutions in Hyderabad.

Presenting a bird's eye view of the draft plan document and major objectives of the Plan, Dr. Swaminathan explained that having developed a good infrastructure during the past plans, the country was now targetted to achieve an average annual growth rate of four per cent in food production and the overall food production was proposed to be of

Soil Health Care and maintenance were proposed.

The Director-General also disclosed that, it was proposed to establish National Bureau for Research and Development on Animal and Fish Genetic Resources. Regarding Extension Education, the Director-General said, that the concepts and activities of the Vigyan Kendras will be enlarged to teach the farmers latest techniques in agriculture. These will also be radiating centres which will be mobile in the rural areas.

The National Demonstration Programme had been reoriented to include farming systems and factor demonstrators. Integrated sea farming was also proposed to be intensified so that all these activities would impart new know-

lakhs will be provided by the United Nations in the form of equipment and technical expertise.

The State Horticulture Produce Marketing Corporation will prepare bulk pasteurised compost under the guidance of the UNDP expert. This will be supplied to the farmers in sealed polythene bags. The Corporation will also arrange the collection and marketing of fresh mushrooms.

Madras organises physical education workshop

The need for the introduction of new trends such as "mental practice", perceptual practice and relaxation techniques in the methods of teaching of physical education was suggested by Dr J. David Manuel Raj, the Workshop Director and Principal, YMCA College, Madras, at the Summer Workshop in Physical Education organised in collaboration with the University Grants Commission.

Dr Raj stressed the need for teaching the syllabi of Physical Education in the universities. Dr Chinnaswami in his paper on psychology of sports said that the recent trends showed how good results could be achieved by introducing kinesthetic practice in gymnastics. He also stressed the importance of diving and motor activities with complex skills in improving one's standard. Amongst the various other topics discussed were : i) Methodology, teaching technology and spectrum of teaching techniques; ii) Importance of professional preparation and increasing its duration; iii) Entrance test of various physical education colleges and iv) Methodology and pedagogy for physical education.

Reorientation for Calcutta BTech course

The Calcutta University Council at its meeting held recently decided to rename and re-orient the BTech course in Chemical Engineering. It was felt that the change was in keeping with the modern trend in chemical engineering. A group of former students of the Calcutta Univer-

CAMPUS NEWS

the order of about 140 to 144 million tons during the Sixth Five Year Plan.

The Director-General felt that it was necessary to review the facilities available at the agricultural universities and plan for their optimum needs. The research profiles of the universities should be relevant to the development needs of the States.

He also said that National Research Centres to cover the aspects of basic, applied and speculative research will be established. It was also proposed to strengthen the existing central institutes and open new ones so that they could supplement and complement the efforts in removing regional imbalances. One Central Research Institute for Buffalo and another for Research and Goats and a third to deal with

ledge to the farmers and this, in turn, would increase their employment potential and also diminish inequality.

Mushroom project to get university assistance

The Himachal Pradesh University has decided to provide necessary research and technical back-up and conduct extension education courses on mushroom cultivation under "Development of mushroom cultivation in Himachal Pradesh" programme sanctioned by the UNDP recently for Himachal Pradesh. The university will also supply quality spawn to the farmers. The project has been initially sanctioned for two years. It envisages an outlay of Rs 60 lakhs, out of which Rs 24

sity's Department of Applied Chemistry welcomed the decision of the Council. More than 90 per cent of alumni were well placed in different fields of industry and education. They have favoured this change. It has been felt that although the demand for properly trained chemical engineers had increased rapidly and other institutes had introduced the course to train chemical engineers, Calcutta University continued to offer a 'cock-tail' course and so the change was needed.

Delhi University officers union formed

The non-teaching officers of Delhi University have formed an association with the aims and objectives of safeguarding the welfare, rights and interests of the university officers.

The main and primary concern for which the association has been formed is to fight the University Grants Commission to get parity of pay scales of officers vis-a-vis teachers of the university with effect from 1st January, 1973. The Association has submitted a memorandum to the Vice-Chancellor of Delhi University as well as to the Chairman of the University Grants Commission to take over the matter on a priority basis.

The Association has pointed out that the parity of status in the scales of pay among the academic and administrative staff in almost all the universities in United Kingdom has enabled a harmonious 'pool-together' which helps the administrative officers to put their point of view across for an objective assessment without fear and feeling of inferiority. They have suggested that a similar situation may also prevail in Indian universities.

Sociological study of small farmers planned at Surat

The Indian Council of Social Science Research, New Delhi, has sanctioned a grant-in-aid of Rs 18,960 for the project "A Sociological Study of Agricultural Problems of Small Farmers" at the Department of Rural Studies, South Gujarat University, Surat. The objectives of the project are:

i) to know the extent of adoption of agricultural technology by the farmers of a tribal taluka of Surat District; ii) to identify the factors which foster or hinder the adoption of agricultural technology; iii) to find out the important channels of communication of work for agricultural development; and iv) to locate the sources of agricultural inputs and problems encountered in getting the same. Dr G.D. Thakore will be the Project Director.

Panjab Correspondence Directorate to be renamed

The Panjab University's Directorate of Correspondence Courses and Evening College may be renamed as Institute of Correspondence Education and Institute of Evening Education respectively. A recommendation to this effect has been made by a committee constituted by the Vice-Chancellor to study the problem of these two schools. The committee has expressed the view that with the change of designation, the two institutes should come under the purview of the Dean of University Instruction instead of the Registrar for all purposes.

Changes planned in Punjab universities

It is learnt that far reaching changes will be brought in the academic administration of the three universities in Punjab. The intention is to make the functioning of the university senates, syndicates more effective in keeping with the State Government's policy of bringing about decentralisation and democratisation of the universities autonomous powers to ensure uniformity of syllabus and rules and to introduce better financial management. Mr Sukh-jinder Singh, the Education Minister, recently said in Chandigarh that a variety of subjects and books introduced and different sets of rules governing migration of students by different universities at present posed great problems to students and their parents, especially government servants who often had to move from stations controlled by one university to

other. These changes will help in achieving some uniformity.

Move to upgrade Anantapur PG centre

The Andhra Minister for Education, Mr B. Venkatarama Reddi, while inaugurating the first floor of the library building of the Anantapur postgraduate centre said that the government would soon upgrade the centre into a university. He exhorted students to maintain high standards of discipline and follow high ethical values. He commended on MSc student who designed a digital clock and advised students to emulate budding scientists. He also asked them to take keen interest in the social activities such as NSS, NCC and Sports which would imbibe in them spirit of service and a sense of devotion to noble causes. He made a plea for evolving common syllabi for all universities in the State.

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REGISTRAR

VCs of Farm Varsities meet in Delhi

A two-day conference of Vice-Chancellors of agricultural universities was held in Delhi to discuss their programmes regarding research education and extension education in the next five years.

Mr. S.S. Barnala, Union Agricultural Minister, while inaugurating the conference stressed the need to pool all resources whether official or voluntary to fight poverty and unemployment. The National Development Council had already approved the twin objectives of gainful employment and reduction of inequalities. It was now time for the agricultural universities and research institutions to play a pivotal role in this direction. From the available data it is evident that only 10 to 11 per cent of the labour force is being absorbed in the organised sector. In other words, agriculture including animal husbandry, fisheries and forestry will have to be major source for employment, particularly covering small, marginal farmers and landless labour.

The Agricultural Minister asked the Vice-Chancellors to consider the kind of reorientation which will be necessary in research programmes so as to make agricultural scientists & workers contribute towards producing more food, jobs and income.

Mr Barnala asked the universities to seek to produce agricultural graduates capable and confident of farming. The education of rural women also needed to be given much greater attention since women had a large role in rural economic activity.

Dr P. C. Chunder, Union Education Minister, was also present on this occasion. He said that the Planning Commission had allocated Rs 200 crores for adult education for the sixth plan which marked a tenfold increase over the figure for the fifth plan. Besides, the Planning Commission had promised more

funds if this was successfully implemented. The Ministry of Education had suggested that ten crore persons in the age group of 15-35 be educated within the next five years.

There was a general consensus that research activities should be designed in the universities to secure the maximum benefits from each agro-ecological region at minimum risk and universities would have to develop strong links with farmers.

The Prime Minister, Mr Morarji Desai, while speaking at the conference said that agricultural universities should involve in a big way in the rural development programmes. He cautioned the teaching community against indiscipline among teachers and students. On the agricultural universities programmes, the Prime Minister said that the universities should have only a few, but well-endowed and staffed, research stations. The large number of stations now attached to them should be converted into demonstration farms which too would be best run by farmers themselves or by voluntary agencies. Research centres that remained should be allowed functional and financial autonomy so that their work proceeded unhindered by bureaucratic delays. Mr. Desai wanted each university to take upon itself the demonstration of integrated rural development in two or three villages. The aim of the programme should be fullest use of locally available resources, avoiding high cost and high risk technology. The students of agricultural universities should therefore become cost-conscious by practice. The greatest contribution the agricultural universities could make was by training farmers who would themselves become trainers.

Universities also had to encourage farming families to send their children to them and to give preference in admission to those

who were likely to return to the farm and village.

Mr. Desai also looked to the universities for development of improved practices for the tribal groups particularly those who would make the nomads among them settle down.

Mr Desai said that he would consider amendment of the law which caused universities to be treated as industries in labour disputes.

New format suggested for varsity sports

The Sports Board of the Association of Indian Universities will sponsor two teams from each zone to compete in the inter-zonal tournaments to be conducted on the pattern of Vizzy Trophy from next year. These tournaments will cover Hockey, Football, Basketball, Volleyball and Badminton.

It has been decided that in case both the qualifying universities from one zone are from the same State then in the semi final league, the two teams would be asked to meet first. This will help to eliminate drawback in arranging matches. It has also been decided that in cricket two teams—winners and runners-up—from each of the four zones would qualify for the inter-zonal tournament. At present only the winners of each zone qualified for the inter-zonal tournament. The eight qualifying teams would be divided into two groups of four teams each. The group matches of four would be played on knock-out basis and the winners from each of the two groups would qualify for the final. The runners-up teams of the two groups would play for the Hard-line Cup.

The Association would seek affiliation from the National Federation in football, volleyball and basketball.

Technical delegates of the Amateur Athletic Federation of India would be invited to the next Inter-University Athletic Meet to be held at Calicut to get the records of the university meets recognised by the parent body. At present records set at

the Inter-University Athletic Meets were not ratified by AAFI.

A calendar for the Inter-University Meet for the next session, has also been prepared for the various tournaments. The Guru Nanak Dev University will host the All-India Inter University Boxing and Gymnastics Championships. Punjabi University will organise cycling while badminton meet (men and women) will be held at IIT, Delhi.

Other meets are: Basketaball (men) north zone: IIT (Kanpur), east: BHU, south: Annamalai, west: Jabalpur; (women) north: Garhwal, south: Kerala Agricultural University.

Boxing: Guru Nanak Dev University: chess: Hyderabad; cricket (men) north: Allahabad, east: Calcutta, south: Madras, west: Indore; (women) SNTD, Bombay; cycling: Punjabi.

Football: north: Jammu and Kashmir, east: Saugar, south: Madurai, west: Udaipur, Gymnastics (men and women): Guru Nanak Dev.

Hockey (men) north: Punjabi, east: OUA, Bhubaneswar, south: Nagpur, west: M.S. Baroda (women) Marathwada; kabaddi: (women) Shivaji; kho-kho: (men) Osmania; rowing: Roorkee; shooting: (men and women) Mysore.

Table Tennis: (men and women): north: Bhagalpur, south: Andhra, volleyball; (Men) north: PAU, east: IIT, Kharagpur, south: Osmania, west: Jabalpur (women), north: Rajasthan, south: Madurai; weightlifting and best physique, OAU, Bhubneswar; Wrestling: Ravi Shankar.

Dr Singh pleads for literary translations

Dr Amrik Singh, Vice-Chancellor, Punjabi University, pleaded for a wider dissemination of the Indian language literature through process of translation of the literature of one language into other Indian languages. He was addressing the eighth annual convocation of the Northern Regional Language Centre, one of the five regional centres of the Central Institute of Indian

Languages at the Punjabi University campus. He underlined the need for full competence in one's own language.

Dr A.K. Srivastava, Deputy Director of the Central Institute of Indian Languages said that the 620 million people of India speaking different languages were all supposed to join the mainstream of 15 modern Indian languages recognised by the Constitution. All the regional centres have so far trained 1,882 teachers in different languages, including 64 in Punjabi language.

Dr O.N. Koul, Principal of the Centre, in his report said that this Centre gave one year's training to inservice teachers in one of the three regional languages, Punjabi, Kashmiri and Urdu. Eighty eight teachers, deputed by different States including Andhra, Assam, Bihar, Goa, Jammu and Kashmir, Madhya, Pradesh, Maharashtra, Manipur, Orissa, Punjab, Tamil Nadu and Himachal were awarded diplomas for competence in teaching one of the three regional languages other than their own language.

Ramanna addresses Nagarjuna convocation

Dr Raja Ramanna, President, Indian National Science Academy, had appealed to scientists and technologists to combine their work with philosophy—philosophy, shorn of its religious dogmas.

Dr Ramanna was delivering the first convocation address at the Nagarjuna University. In his address he pleaded for the synthesis of culture with people's aspirations. He said that if we have accepted science as a vehicle to derive material benefits, then we also have to accept scientific philosophy as the basis of our society. One without the other will lead to disaster.

Dr Ramanna said that science was inevitable for all aspects of our development—mental and material. Science without philosophical aspect can cause great disaster in the world. By just concentrating on its utility one forgets the double-edged aspect of

science. It can be of great help to humanity but it can also destroy, for any discovery of science there is this dual capacity. He said that it was only our ethics and our deep belief in scientific philosophy that could act as a protective device from the evil aspects of science.

(Continued from page 982)

Qualifications

M.D. (Pharmacology)/M.D. (Pharmacology & Therapeutics) M. Sc. (Pharmacology)/Ph. D. (Pharmacology)/D.Sc. (Pharmacology). The requisite recognised postgraduate qualification in the subject and three years teaching experience as Tutor—Demonstrator in Pharmacology of which one year should be after postgraduate qualification.

Desirable

(a) Published Research work.

6. Lecturer in Anatomy (Histology, Scale Rs 700-40-1100-60-1600 plus allowances.

Qualifications

M.S. (Anatomy), M.Sc. (Anatomy), Ph.D. (Anatomy), D.Sc (Anatomy) The requisite recognised postgraduate qualification in the subject and 3 years teaching experience as Tutor/Demonstrator in Anatomy of which 1 year should be after postgraduate qualification.

Desirable

(a) Published work

(b) Teaching experience in Histology.

7. Lecturer in Pathology. Scale Rs 700-40-1100-50-1600 plus allowances.

Qualifications

M.D. (Pathology)/M.D. (Pathology & Bacteriology) / M.D. (Path. with Bacteriology)/M.Sc. (Medical Pathology)/ Ph. D. (Path.) D. Sc. (Pathology)/ Speciality Board of Pathology (USA) M R.C. Pathology (Lond.) M.C.P. (Australia). after examination.

The requisite recognised post-graduate qualification in the subject and 3 years teaching experience as Tutor/Clinical Pathologist/Resident Pathologist/Demonstrator in Pathology of which 1 year should be after postgraduate qualification.

Desirable

1. Morbid Anatomy

2. Haematology

Prescribed application forms and instructions may be had from the Deputy Registrar (Executive) either personally or by sending a self-addressed envelope of 23x10 cm. Last date for receipt of applications is 22nd June 1978. Incomplete applications and those received late may not be considered.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T. A. equal to one single Second Class Railway fare only.

Jamalur Rahman
REGISTRAR

Alternative syllabuses and advanced options

The Ishwarbhai Patel Committee has evolved a useful idea: the need to have syllabuses at two levels. This is the only way to ensure a measure of educational attainments for all pupils and at the same time the attainment of high standards by those having the requisite aptitudes.

The Committee has restricted the idea to mathematics and science at the top classes and has taken care to warn that the two syllabuses "must be considered alternatives and not higher or lower courses" and that either of the alternatives should be accepted as a qualification for admission to the plus two stage. Nevertheless the difference of academic content and level between the alternatives outlined in the report is obvious.

Perhaps the committee wanted to avoid any grading device that might look elitist in character. But the provision of parallel courses of advanced content need not be elitist; it can be a device, not to separate the gifted pupils from the rest, but to identify the differential gifts of pupils.

As to grading of pupils according to levels of academic attainment, that is exactly what we are doing in all educational systems. Examination reforms aim at making the grading more accurate. Barring Ivan Illich, nobody is seriously proposing any alternative.

It therefore seems desirable that committee's proposal be interpreted to mean that, besides a common core, the curriculum may include optional courses of advanced content in several areas. Schools would be free to provide, and pupils free to offer, any of the advanced courses. Attainment in the core curriculum alone will determine eligibility for admission to higher studies. The additional courses will be useful only as a guidance for choosing the electives at the higher stage. Even so, many pupils might offer them and it will be possible to identify their special aptitudes.

The difference between the core and additional courses should

reflect the same difference that the committee has envisaged between the alternatives outlined in the report. For instance, geometrical theorems will find a place in both; but their theoretical proofs and riders based upon them will be included only in the latter. The principal of Archimedes will be an item in the core; but calculations involving it should be shifted to the advanced level.

Designed in this way the more curriculum will satisfy the requirements of a broad-based education for all pupils and the additional courses will reveal differential aptitudes. All advanced countries of the world have adopted this principle of differentiation of talent at appropriate stages. It is true that early specialisation is under attack in some countries notably in Britain. But all are agreed that diversification should take place at the secondary stage. Diversification should be taken to mean, not only a division into an academic and vocational stream, but also differentiation of several academic and vocational streams. The

Vocational courses at secondary stage recommended

The Adiseshiah Committee has recommended that vocational courses at the higher secondary (plus 2) stage should prepare students for self-employment or enhance their employability in agriculture, business, para-medical education and general services rather than turnout mechanics for manufacturing and engineering industries like industrial training institutes and polytechnics.

The 27-member national review committee headed by Dr Malcolm S. Adiseshiah, Vice-Chancellor of Madras University, was set up by the Union Education Ministry to recommend a plan of action for vocationalisation of education at the secondary and higher secondary stages.

The committee wants students taking the general education courses at the plus 2 stage to be engaged in "socially useful pro-

French pattern is remarkable in this respect and may provide some hints for us.

According to a survey published by the OECD in 1972, the French system starts with a common primary base of the first five classes. Numerous channels open out from that base. The one that corresponds to our high and higher secondary schools is divided into a first cycle comprising class 6 to 9 and a second cycle comprising classes 10 to 12 at the end of which is awarded the baccalaureat entitling the holder to enter the university. Streaming on a tentative basis begins in class 8 and assumes the shape of a multi-stream estuary in classes 10 to 12. Altogether 34 different terminals are listed in the survey, of which 17 can be deemed to be academic and the rest technical. These are the principal lanes of the highway leading to the university.

Our preoccupation to help the deprived and the disadvantaged should not blind us to the fact that education beyond a certain level cannot be egalitarian and that the social benefit of our educational enterprise can be maximised only by introducing at an appropriate stage measures to identify and nurture is hierarchy of talent.

ductive work" for 15 per cent of their time during the working weeks this is described as meaningful manual work resulting in goods or services for the community—rural development, community service, adult literacy, small savings drive, organisation of libraries and the like.

The committee calls for a special effort to use expertise of practical working people as well as academics in preparation of curriculum and text-books.

It says vocational courses should not be a dead end in themselves. Those who have finished them and wish to improve their qualifications should be admitted in the second year of agricultural universities or third year of polytechnics, nursing colleges and other institutions which require a 10-year school pass for admission.

Need for meaningful scientific research stressed

West Bengal Chief Minister, Jyoti Basu stressed the need for relating scientific work with the social needs and said communication between the scholars, the laboratories and the common people was necessary to make scientific research more meaningful.

Mr Basu was inaugurating the year-long diamond jubilee celebration of the Bose Institute at Calcutta.

Mr Basu expressed the hope that the results of the research would reach all sections of people and urged the scientists to know the people's problems which would give them direction in their work. All endeavours should be directed towards the benefit of the country.

Delivering his key-note address Dr. A. Ramachandran, Secretary, Department of Science and Technology, said his department's role was essentially to end the isolation of scientific projects and bring them together in complementing well co-ordinated projects.

He said many specialised groups were working in the field of applied micro-biology in various national laboratories and many of them were isolated from each other.

He said his department had set up an expert panel of eminent micro-biologists drawn from all over the country to advise the department on how to foster both fundamental and applied aspects of research in the subject.

The Institute Director Dr. S.C. Bhattacharya urged the Chief Minister to provide the Institute with adequate funds so that it could create two diamond jubilee professorships at the Institute.

More funds likely for adult education

The Planning Commission has indicated its willingness to increase, if necessary, the Sixth Plan outlay for the National Adult Education Programmes.

The Programme for providing adult education to nearly ten crore people in the 15-35 age group in about five years is to be launched on October 2, Gandhi Jayanti Day.

The draft plan has provided an initial outlay of Rs. 200 crores for the five-year period as against Rs 600 crores estimated as the requirement by a working group of the Ministry of Education.

The programme aims at covering 1.5 million people in the first "preparatory" year.

The Ministry plans to cover any left over groups in the target population during the first year of the next plan.

The states are expected to send in their plans for the adult education programme by mid-June for the first year and by July end for the entire five year period.

Meanwhile, the Union Education and Information and Broadcasting Ministries have set up a joint group for utilising the various media units to project the Adult Education Programme.

Ten states have already set up resource centres to provide academic support to the National Adult Education Programme by conducting initial surveys training personnel, preparing teaching/learning material and conducting evaluation studies.

The Adult Education Programme is absorbing the non-formal education schemes now operating in 60 districts all over India and the farmers functional literacy schemes under implementation in 144 districts.

There will be a single project in each district funded by the Centre but implemented by the State Government.

The University Grants Commission is expected to earmark some of its funds to universities some of its work under the Adult Education Programme.

The Nehru Yuvak Kendras will also be mobilised for the Adult Education Programme. The National Service Scheme will also concentrate on involving students and teachers in adult education.

Women will be given precedence in engaging personnel for implementing the Adult Edu-

cation Programme since 62 per cent of the target population are women.

Defence courses for Punjabi Varsity

The Academic Council of the Punjabi University, at its meeting held under the chairmanship of Dr Amrik Singh, Vice-Chancellor, approved a proposal for the introduction of a special course for preparing candidates for the combined defence services examination. The course will be introduced this year at the BA (TDC) Parts II and III levels.

The Council also approved the Defence Services Staff College course as being equivalent to the BA degree of the university for the purpose of admission to MA (Defence Studies) only in the case of those who have completed ten years of service as commissioned officers.

A proposal was also approved for instituting a separate course for MA (Honours) in Punjabi from this academic session.

The Council recommended that in the case of LLB from this year required percentage of marks for placing a candidate in the first division should be reduced from 65 per cent to 60 per cent.

Ideology of Nehru

The North-Eastern Hill University had created the Mahatma Gandhi Visiting Professorship through a donation of Rs. one lakh by Prof V. Venkata Rao, Professor Emeritus at the Gauhati University. Prof. Rao, a noted Political Scientist, had written several books, the latest one being a study of the politics of the hill tribes of north-eastern India. He has donated virtually all of his earnings to the university in creating the Mahatma Gandhi Visiting Professorship at NEHU so that distinguished scholars in different disciplines can be invited to spend some time at the university and deliver lectures. The visiting professorship was inaugurated in October 1975 by Shri Fakhruddin Ali Ahmed, the then President of India. This year Dr. S. Gopal, Professor of Contemporary History, Jawaharlal

Nehru University, New Delhi gave two lectures, one on Ideology of Indian Nationalism and another on the Mind of Jawaharlal Nehru.

In his first lecture Dr Gopal analysed the nature of British imperialism pointing out how the British harnessed India to imperial interests. He argued that the coming of Mahatma transformed the character of Indian Nationalism. It was Gandhi who for the first time brought down the Indian National Movement to the mass level through mobilisation of the peasantry. Dr Gopal suggested that Gandhi was not only a great liberator but also a great integrator as the basic objective of his constructive programme was the emotional integration of India. But during this period the ideology of Indian Nationalism was mainly political since its economic aspects such as the Trusteeship system were unreal and served only to bring in the support of the wealthy. From the thirties however the ideology of National Movement became that of Jawaharlal Nehru. Based on an acceptance of Marxism as an analysis of the past and a rejection of Marxism as a prescription for the future, and on the idea of Civil Liberty as an absolute value, derived from 19th century Europe, Nehru's ideology was inspired by Bertrand Russell and by the idea of the infinite perfectibility of man.

This new ideology which sought to keep the peasantry within the National Movement, through introduction of an economic element, was not acceptable to Gandhi and his followers. Thus two ideologies emerged in the Congress—the Gandhian ideology and the Nehru ideology. Gandhi permitted this uneasy co-existence mainly because keeping Nehru and his followers within the Congress. On the other hand Nehru and others did not leave the Congress primarily because the Congress was then the only organisation which could effectively work for and secure their objectives.

In the second lecture Dr. Gopal elaborated on themes he had introduced in the first lecture regarding the ideology of Jawahar-

lal Nehru. He said that Nehru's ideology might be contradictory as compared to that of others but there was no denying the fact that it was Nehru who educated the Indian people in civil liberties and democratic principles and education which was responsible for the overthrow of the dictatorship in 1977.

The romantic element was dominant in Nehru's ideology. His Marxism was more an emotional response than an intellectual framework. Nehru's concept of modernisation was naive because of this romantic element. He tended to ignore the darker aspects of the Indian situation.

It is to the credit of Nehru however that he realised that the long term authoritarian rule was not advantageous to India. After all, the whole trend before 1947 was towards authoritarianism. There was no reason whatever why he should not have continued it. Instead, he chose parliamentary democracy. It has been suggested that Nehru introduced universal franchise only to create a bulwark against revolution because the majority, the peasantry, are essentially conservative. Nehru carried out an unseen revolution, conducting general elections fairly and smoothly. Nehru believed that local democracy should be encouraged so that democracy in the country at large will grow. That is why he took keen interest in the idea of community development.

On the economic plane, Nehru did not feel that monopoly capitalism would pose a threat in India because India was still in the primitive stage of capitalism.

After 1947 Nehru felt that the class war need not be fought but can be settled peacefully by negotiation. Dr. Gopal in conclusion pointed out that the disowning of socialist theory by Nehru made it easy to be flexible but it also had the effect of diluting policies of action. A slow erosion of assumptions gradually created in the end a constructive mass of contradictions in a man who represented India—a radical who preferred non-violence, a Marxist opposed to violence, a socialist totally

committed to civil liberties and so on.

Dr C. D. S. Devanesen, Vice-Chancellor who presided over these meetings, said that the question "who is a great man" has fascinated historians for a long period. It is a difficult task for the historian to reconstruct the image of a great man while feeling his way around the legends and the myths about a great man. In his concluding remarks the Vice-Chancellor said that the country itself was a constructive mass of contradictions and the universities and colleges of our country have to analyse the situation and provide solutions.

Personal

- (1) Shri S.S. Wodeyar has been appointed Vice-Chancellor of Karnatak University.
- (2) Dr M.S. Randhawa, former Vice-Chancellor of Punjab Agricultural University has been honoured by the Haryana Agricultural University by awarding him a degree of Doctor of Science (Honoris Causa) in appreciation of his tremendous contribution to science, agriculture, city planning, architecture and literature.
- (3) Prof V. R. Taneja, Head of the Postgraduate Department, and Dean, Faculty of Education, University of Jammu, has been selected as national lecturer by the University Grants Commission.
- (4) Prof. Bachchan Singh, Dean of Studies, Himachal Pradesh University has been invited by the University Grants Commission to participate in the National Lectures Scheme during 1978-79.

Integrated Planning for Greater Dhanbad

Dhanbad is fast becoming an industrial city. It is the headquarters of a number of industrial and Governmental organisations like Bharat Coking Coal Ltd., Collieries Division of TISCO and IISCO, Directorate-General of Mines Safety, Central Fuel Research Institute, Central Mining Research Station, Coal Mines Provident Fund Commissioner, Coal Mines Welfare Organisation, Central Coal Washeries Organisation and Divisional Headquarters of Eastern Railways. It is the seat of learning in mineral sciences and technology at the highest level, namely that of Indian School of Mines. If we consider the concept of Greater Dhanbad as a circular region with a radius of 30 km, assuming the centre to be Rajendra Market, then this hub of industrial activity will also include Sindri Complex of Fertilizer Corporation of India, Bokaro Steel Complex and a host of small and medium scale industries. Greater Dhanbad, therefore, can aptly be called as Mineral Capital of India.

With such a glittering array of national enterprises and with yearly investments running into hundreds of crores of rupees, the city as of today, presents a very dismal picture. It has no essential civic and municipal facilities worth the name. Street lights are practically non-existent, roads are in a pitiable condition, telephone services are deplorably poor, mass transport and communication facilities are negligent—it has no city bus service, there is no integrated water supply scheme—with the result that each organisation has to dig its own wells and erect water towers.

Dhanbad does not have a Master Plan involving housing, market places, recreation centres and others which usually go with a city of such dimensions. Municipal Corporation, if any, appears to be non-existent. In the absence of viable city bus service, a familiar sight is that of people crowding and sitting over the top

of private buses, which can cause a serious accident under Gaya Bridge any moment. A popular joke all over the country is that in Dhanbad—Jharia region, one can easily see upto 26 people sitting in every nook and corner of a Taxi. Open burning of coal and slaughter mining has made this region as the most polluted slum of the country.

To mitigate this deplorable picture, I present here an integrated plan for the development of Greater Dhanbad as a viable expanding industrial city with promise of much better living and working conditions. The plan essentially involves creation of Greater Dhanbad Development Authority, shifting of population from Jharia mining belt and opencast mining of coal standing on pillars, and discusses the associated problems of resources mobilisation and organisational structure necessary for implementation of this strategy.

For implementing the integrated development of Greater Dhanbad, it is proposed that an autonomous organisation, which may be called "Greater Dhanbad Development Authority (GDDA)" should first be created. Its constitution and terms of reference should be on similar lines as that of Delhi Development Authority (DDA) or Calcutta Metropolitan Development Authority (CMDA). This agency will be in overall charge of the development of Greater Dhanbad region. The primary function of this agency will be to create better living conditions including housing, infrastructure for regulated development of industries and better civic amenities like roads, street lights, water supply scheme and transport services. The Greater Dhanbad region may extend from Great Boundary Fault in southern side to G.T. Road in the North, Pradhankhanta in the East and Gomoh in the West. The authority will be headed by a dynamic Chairman and will have representatives from all

the interests involved in this development programme.

On an conservative estimate, about 800 million tonnes of good quality coking coal is locked up in the form of pillars and barriers in this coalfield, out of which at least 200 million tonnes is lying under Jharia town itself. This large national resource is practically a total loss, unless a foresighted plan is immediately drawn up for its extraction. Amongst the various alternatives discussed during the 1972 Seminar on Reconstruction of Jharia Coalfield, the extraction of this large tonnage of coal by opencast mining promises to be most plausible. Shifting of Jharia and other satellite towns is proving to be a major hurdle in implementation of this mining plan. The shifting obviously cannot be done without the will on the part of all the agencies involved. There is, therefore, a greater need for a central coordinating agency as recommended above for implementing the plan on such a large scale and dimension.

The technology of opencast mining over developed workings has already been tried in Karanpura Coalfield and in a small part of Jharia coalfield and should pose no problem upto a depth conforming to overburden to coal ratio of 6 to 1. At least half of this locked up coal, which is slowly burning itself by fires all around this coalfield, can be easily extracted by such opencast mining. This immediately represents a gain of 400 million tonnes of coking coal to national resources, which at the rate of Rs 100 per tonne, comes to Rs 4000 crores addition to Gross National Product. The cost of shifting the Jharia and other townships will be about Rs 200 crores and therefore, whole exercise can be very profitable from point of view of the larger national interest.

Consequent upon acceptance of the hypothesis that a major portion of Jharia coalfield can be mined by opencast mining, the problem of shifting small and big towns is the most dominant one. A massive construction programme will have to be undertaken to construct new housing colonies at

suitable locations outside the coal bearing belt, so as to provide a healthy and pollution-free environmental living conditions. It is proposed that new residential and office accommodation will be provided through a ring of self contained colonies stretching from outer limits of this coal belt to G.T. Road in North and South of Damodar river in the South. These population centres will be connected to mining sites through an effective bus and public transport system. More and better roads, wider under and overbridges will have to be constructed at strategic points.

The plan, being gigantic one, can only be implemented on the national scale, with active support from Central and State Governments, and with the active participation by all the important sectors affected by this development scheme. The major monetary support can come from Union and State Governments, BCCL, BSL, FCI, CMPFO, Life Insurance Corporation, General Insurance Corporation, Housing and Urban Development Corporation, State Housing Board, Public Financial Institutions and Nationalised Banks. The GDDA can be constituted with an initial capital base of Rs 10 crores, and its operational and running expenses can be met by levying a developmental cess of one rupee per tonne of coal produced in the area. World Bank can also be approached for assistance in the form of long-term aid. Once a viable organisation, which can really deliver the goods is set-up, the resources should not pose any problem.

The success of this plan will depend entirely on the homogeneity and compactness of the organisation managing the activity, namely GDDA. It will be headed by a Chairman of proven integrity and acceptable to all the major contributors funding this developmental activity. The Chairman will function on the advice of a managing council, consisting of members from all major organisations participating in the programme. The Chairman will be appointed by the State Government in consultation with Central Government. He will be assisted

by a set of functional staff specializing in demolition, housing, roads and bridges, architecture, economists, over-all surface planners and mining engineers. The team will have to be chosen carefully so as to form a really working group. It will have at its disposal all the resources of state and district administration for effective execution of the plan.

The plan as presented above is just an outline in nature. Once it is accepted, it will have to be redrawn in more detail for carrying out the massive rebuilding of this important sector of national mineral wealth. Time is running out and we will have to act quickly, otherwise we will go on perpetuating the miseries and deplorable living conditions of colliery workers. A large quantity of good quality coking coal is already lost due to underground fires and unless the rot is stopped by large scale opencast mining, a huge tonnage of valuable mineral will be lost for ever.

Chunder wants education linked to development

Dr P.C. Chunder, Minister for Education and Social Welfare, said that education must be linked to development to provide enough motivation for adults to acquire it.

For want of this linkage, the country did not get the best out of the all-round investment made so far.

The Education Minister was inaugurating the first meeting of the standing committee on education for rural development at the National Staff College for Educational Planners and Administrators.

Dr Chunder also recalled the UNESCO agreement between the developed and developing nations on having education oriented for improving the quality of life in the developing countries.

The Minister pointed out that though various proposals and schemes were formulated for meeting such needs, the basic problem of implementation remained. This was not easy as we were not accustomed to team work. Some agency would have

to be identified as a nodal point to co-ordinate the efforts and programme pursued by different organisations.

He advised that a beginning in bringing about proper co-ordination between education and development could be made in rural areas where the need for it was the greatest. Existing tools for the purpose would have to be re-oriented to achieve the objectives.

TIFR scientists to study cosmic rays in space

A team of scientists of the Tata Institute of Fundamental Research are making hectic preparations for the Indian experiment on cosmic rays in the first space shuttle/spacelab mission of the National Aeronautics and Space Administration (NASA) of the United States.

Work on the Spacelab, which will conduct some 35 scientific experiments with tremendous significance to space research, is proceeding on schedule and the lab is expected to be launched in December 1980.

The TIFR team led by Prof S. Biswas, who is the prime investigator of the cosmic ray project, has developed a preliminary model of the 'cosmic ray detector', the working of which has been highly satisfactory.

This has paved the way for the fabrication of two prototypes that will culminate in the actual flight model that will be placed aboard the space shuttle Spacelab.

Prof Biswas is now in the United States attending a meeting of the principal investigators for discussions relating to the experiment with the NASA scientists and engineers.

The actual flight model of the detector is expected to be fabricated and shipped to manned space flight center before the end of 1979. The NASA scientists will then study the compatibility of the detector with the other sophisticated instruments aboard the space shuttle/spacelab.

After finding whether the detector integrates well or not with the instruments, it will be placed on the space shuttle/spacelab.

A list of Doctoral Theses Accepted by Indian Universities

SOCIAL SCIENCES

Psychology

1. Thakkar, Vithaldas Ratansinh. A study of potential teachers' effectiveness: Their educational attitudes in relation to their rapport with the students and their survival and job satisfaction in the profession. M.S. University of Baroda.

Sociology

1. D'Costa, Adelyne M. Social Change in Goa. Bangalora University.

Anthropology

1. Dasgupta, Bimankumar. The dynamics of social mobility movements among the Rajbansis of North Bengal and Assam. University of Calcutta.

Political Science

1. Ganchaudhuri, Jagadischandra. The Tipras of Tripura. University of Calcutta.
2. Malhotra, Shanta. Political thought of Swami Dayanand. Gurukula Kangri Vishwavidyalaya.
3. Meshram, Baburao Jagan. Department of Agriculture in India: Its organisation, staffing, financing and working. University of Saugar.
4. Om Prakash. Working of panchayat raj institutions in U.P. with special reference to Meerut District. Meerut University.

Economics

1. Dutta, D.K. Optimal development of a dual economy with particular reference to the marketable surplus problems. Indian School of Mines.
2. Gupta, Usha Rani. A study of federal finance in India. Meerut University.
3. Karandikar, Bal Krishan Kashinath. Trade union movement in Madhya Pradesh. University of Indore.
4. Naik, Shashikant Dattatraya. A techno-economic study of the dyestuffs and intermediates industry in India. University of Poona.

Public Administration

1. Haragopal, G. Administrative leadership in panchayati raj. Kakatiya University.

Education

1. Girish Bala. A factorial analysis of reasoning ability of 13+14+ and 15+ children studying in Delhi Higher Secondary Schools. Jamia Millia Islamia.
2. Nagarajan, V. An investigation into certain aspects of personality, social background and ideological meaning among the activists of three political parties in Tamilnadu. University of Madras.

Commerce

1. Khullar, Lal Chand. Marketing of silk by public sector units in Jammu and Kashmir State. University of Jammu.
2. Nigam, Dharam Sen. Economics of basmati rice cultivation in Uttar Pradesh with special reference to Dehra Dun Valley. Meerut University.
3. Rane, Digambar Raghunath. Socio-economic development of Dhulia District. University of Poona.

HUMANITIES

Philosophy

1. Kale, Anjali Dinkar. Moral and political concepts underlying Panchatantra. University of Poona.
2. Philip, Ponvelil John. A study of the biblical doctrine of salvation and the concept of mukti in Advaita Vedanta according to Shankara. University of Poona.

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2. Rastogi, Alka. Blend of realism and romance in the novels of William Somerset Maugham. Meerut University.

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1. Bahulkar, Shrikant Shankar. Bhaisajyani in the Kausika sutras. University of Poona.
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INDIAN INSTITUTE OF TECHNOLOGY DELHI Hauz Khas, New Delhi-110029

Advertisement No. 4/78

Applications are invited for appointment to various academic and other positions in the following Departments/Centres/Research Projects etc. of the Indian Institute of Technology, Delhi :

Posts And Scale of Pay

1. Professor : Rs. 1500-60-1800-100-2000-125/2-2500.
2. Assistant Professor : Rs. 1200-50-1300--60-1900.
3. Lecturer : Rs. 700-40-1100-50-1600.
4. Industrial Liaison Officer : Rs. 1500-60-1800-100-2000.
5. Senior Design Engineer, (6) Senior Scientific Officer Grade-I, (7) Deputy Librarian : Rs. 1100-50-1600.
8. Design Engineer, (9) Senior Scientific Officer, Grade-II : Rs. 700-40-900-EB-40-1100-50-1300.
10. Research Associate: Consolidated amount between Rs. 700/- and Rs. 1100/- p.m.
11. Senior Research Assistant : Rs. 550-25-750-EB-30-900.

Candidates selected would be offered position depending upon their academic background and relevant teaching/research/professional experience. Higher initial pay will be admissible to specially qualified and deserving candidates.

Posts are permanent unless otherwise indicated. Appointees will have option to elect any of two schemes viz. Contributory Provident Fund-cum-Gratuity or General Provident Fund-cum-Pension-cum-Gratuity operating at the Institute, on completion of one year's service. The posts also carry allowances as per rules, which at present correspond to those admissible to Central Government employees. Age of retirement is 60 years. Candidates called for interview will be paid second class railway fare from the place of their duty to Delhi and back by the shortest route.

Indian candidates abroad, if selected for appointment, are allowed travel grant contribution limited upto a maximum of economy class airfare for self and family provided they undertake to serve the Institute for a period of 3 years, after joining.

QUALIFICATIONS

Professor—Good Master's Degree/Doctorate Degree in appropriate field with minimum 7 to 10 years' distinguished experience in teaching/research in Institution of University Standard at Post-Graduate level. Specialised knowledge in one or more specified fields with experience in guiding research. Professional/Scientific work of outstanding merit and Doctorate Degree would be preferred.

Assistant Professor—Good Master's Degree/Doctorate Degree in appropriate

field with minimum 5 years' experience in teaching/research in Institution of University Standard. The experience must include research/industrial experience of not less than 2 years. Specialised knowledge in one or more specified field/subject with outstanding teaching/research experience and Doctorate Degree or published work of equal standard would be preferred.

Lecturer—Good Master's Degree in appropriate field with 2 years' research/industrial experience in any Institution of University Standard/Establishment of repute. Doctorate Degree or published work of equal standard preferred. **Research Associate**—Essential—Ph. D. in related discipline. Experience in research/development or in Industry and publication desirable.

Senior Research Assistant—First Class B. Tech. Degree/First Class Master's Degree in Science in related discipline only. Final year students with outstanding academic record may also apply. Their selection/appointment will be subject to getting a First Class Degree.

I. DEPARTMENT OF APPLIED MECHANICS

Assistant Professor/Lecturer
Field of Specialisation—(i) Dynamics of Large deformation with experience in dynamic testing, Analysis and synthesis of mechanisms, (ii) Turbulent Flows, Internal and External Flows, Flow through Fluid-mechanical equipment, two phase and non-newtonian flows, Boundary Layer flows, (iii) Design Engineering and systems planning, (iv) Physical metallurgy, (v) Bio-mechanics.

II. DEPARTMENT OF CHEMICAL ENGINEERING

Professor, Assistant Professor/Lecturer
Field of specialisation—Professor—Process Dynamics & Control. **Assistants Professor/Lecturer**—Process Dynamics and Control, Thermodynamics, Polymer Engineering, Transport Phenomena, Process Plant Design.

III. DEPARTMENT OF CIVIL ENGINEERING

Research Associate/Senior Research Assistant—Posts Temporary for Research Project on Offshore structures. Prescribed Degree should be in Civil Engineering with excellent academic record and specialisation in Structures/Structural Dynamics. Knowledge of Computer Programming will be of advantage.

IV. DEPARTMENT OF ELECTRICAL ENGINEERING

Senior Research Assistant—Posts Temporary for research projects on (i) Process Control and (ii) Computer Technology.

Qualifications—(i) **Process Control**—B.Tech. First Class or M.Tech. in Electrical Engineering. Experience in digital instrumentation (2 years in the case of

B. Tech.) desirable. (ii) **Computer Technology**—B. Tech./M. Tech. in Electrical Engineering with familiarity in digital system design and associated software development. In the case of B. Tech. one year's experience in the line desirable.

V. DEPARTMENT OF MATHEMATICS

Research Associate—Post temporary **Field of Specialisation**—Applied Mathematics with special reference to high temperature gas dynamics, oceanography, computational fluid mechanics.

VI. DEPARTMENT OF MECHANICAL ENGINEERING

Professor, Assistant Professor/Lecturer, Senior Research Assistant.
Field of Specialisation—**Professor**—Industrial Engineering, Thermal Engineering, Mechanical Design and Analysis. **Assistant Professor/Lecturer**—Turbo-machines, Power Plant Engineering I.C. Engines, Combustion Generated Pollution, Refrigeration & Heat Transfer, N.C. Machine Tools, Metal Cutting, Metal Forming, Industrial Engineering, Instrumentation and Control, Machine Design and Drawing, Mechanism. **Senior Research Assistant**—(Post temporary under Science & Technology Programme in Design).

Qualifications—First Class Bachelor's Degree in Electronics/Electrical Engineering or First Class M. Sc. in Physics. Experience in Instrumentation Design and Development desirable.

VII. DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES

Assistant Professor
Field of specialisation—Economics

VIII. DEPARTMENT OF TEXTILE TECHNOLOGY

Senior Scientific Officer Grade—I : For—Scanning Electron Microscopy Laboratory. **Research Associate/Senior Research Assistant**—Posts temporary for research projects on (i) Development of composites with improved properties and (ii) Applicability of open and spinning to conditions in the Indian Textile Industry.

Qualifications—**Senior Scientific Officer Grade—I** : Good Bachelor's Degree in Engineering or a Master's Degree in Science with minimum of five years experience in running a scanning and/or transmission electron microscope facility. Ability to handle different types of samples and to coordinate work in interdisciplinary projects. Good record of published work in this area is desirable. Persons with lesser experience (minimum 2 years) may be considered for appointment at the level of Senior Scientific Officer Grade—II.

Research Associate—(i) Ph. D. in Polymer Science/Materials Science/Fibre Science (ii) Ph. D. in Textile Technology/Engineering.

Senior Research Assistant—(i) First Class Master's Degree in Chemistry/Physics or B.Tech. in Chemical En-

Engineering/Textile Technology/Textile Chemistry, preferably with 2 years' experience. M.Tech. in Materials Science/Fibre Science/Polymer Science desirable. (ii) First Class Bachelor's Degree in Textile Technology/Textile Engineering. Master's Degree desirable.

Field of specialisation : Research Associate/Senior Research Assistant—(i) Composite Materials & Polymer blends; Plastic Technology, Man made Fibres, Polymer Science. (ii) Spinning.

IX. BIO-CHEMICAL ENGINEERING RESEARCH CENTRE

Assistant Professor/Lecturer, Research Associate

Field of specialisation—Assistant Professor Microbiological Engineering, Enzyme Engineering, on-line programmed analysis of process variables and computer aided design of bioreactor, as evidenced by adequate research publications. First Class Bachelor's Degree in Chemical Engineering/Food and Bio-Chemical Engineering with Ph. D. in Chemical or Bio-Chemical Engineering is required. **Lecturer—**Microbiological and bioconversion processes with some research publications. First Class Degree in Chemical Engineering/Food and Bio-chemical Engineering/Applied Microbiology is required.

Research Associate

Qualifications—First Class Degree in Microbiology/Microbial Biochemistry/Genetic Engineering with Ph. D. in Chemical/Bio-chemical Engineering. Teaching and Research experience in the general field of Bio-chemical Engineering, Waste Treatment, Industrial Microbiology will be considered as an additional qualification.

X. CENTRE FOR BIO-MEDICAL ENGINEERING

Research Associate, Senior Research Assistant—Posts temporary under the Research Scheme 'Health Care System Planning'.

Qualifications—Research Associate—Bachelor's Degree in any Engineering discipline with Ph. D.

Senior Research Assistant—Bachelor's Degree in any Engineering discipline with background in Control Theory or Computer Science or Operations Research or System Engineering.

Desirable : M. Tech. or Postgraduate Diploma in Management and System Engineering or Control System and Instrumentation or Power Apparatus & Systems or Computer Science or Industrial Engineering or Operations Research or Biomedical Systems.

XI. CENTRE FOR APPLIED RESEARCH IN ELECTRONICS

Assistant Professor/Lecturer/Senior Design Engineer—For the Centre

Assistant Professor/Senior Scientific Officer Grade-I, Lecturer/Senior Scientific Officer Grade-II, Senior Research Assistant—(Temporary for Research Scheme in Under-Water Electronics).

Senior Scientific Officer Grade-II—Temporary under Science & Technology Programme in Integrated Circuit Technology.

Field of specialisation—Electrical Engineering/Physics—Microwave Circuits, Digital Signal Processing, Integrated Circuit Technology, Solid State Devices, Underwater acoustics.

Qualifications—Senior Design Engineer/Senior Scientific Officer Grade-I : First Class Bachelor's Degree in Engineering in appropriate field or Master's Degree in Physics with minimum 5 years' experience in teaching/research/design development and production in (a) semi-conductor circuits (b) Microwaves (c) Computers—Master's Degree/Doctorate Degree or published work of equal standard preferred.

Senior Scientific Officer Grade-II : First Class Bachelor's Degree in Engineering in appropriate field or Master's Degree in Physics with two years' experience in research/design development and production of digital electronics instruments. Master's Degree/Doctorate Degree or published work of equal standard preferred.

Senior Research Assistant—First Class B.Tech. in Electrical Engineering/M.Sc. in Physics.

XII. COMPUTER CENTRE

Assistant Professor/Lecturer

Field of specialisation—(i) System simulation (ii) compiling techniques (iii) Computer Architecture (iv) Computer Aided Design (v) Computability (vi) Theory of Programming Language (vii) Switching and Automata Theory (viii) Numerical Analysis and Operational Research.

Persons who applied in response to advertisement Nos. 5/76, 1/77 or 4/77 need not apply again but may send their updated biodata.

XIII. CENTRE FOR ENERGY STUDIES

Research Associate/Senior Research Assistant—Posts temporary for the Centre as well as for Research Projects under Science & Technology Programme.

Qualifications—Essential—Research Associate—Ph. D. in a related discipline. **Senior Research Assistant—**M. Tech./M.Sc./M.A./B.Tech. in related discipline. Published work/experience in the field is a desirable qualification for both the posts.

Field of specialisation—(a) For positions in the Centre—(i) Electrical Energy systems (ii) Thermal and Photovoltaic Utilization of Solar Energy (iii) Gasification and liquification of Coal. (iv) Utilization of unconventional Fuels in I.C. Engines. (v) MHD Power Generation. (vi) Laser Fusion (vii) Sociopsychological survey on fuel consumption/utilization etc. (viii) Pattern of Rural Energy consumption (ix) Bio-energy. (b) For Research Projects under S&T Programme—Laser Application : (i) Self Focusing of Laser Beams (ii) Optical Waveguides.

XIV. SCHOOL OF BIOENGINEERING AND BIOSCIENCES

Assistant Professor/Lecturer, Research Associate/Senior Research Assistant—Posts temporary.

Field of specialisation—Assistant Professor/Lecturer—Enzyme purification/Enzyme Mechanism. M. Sc. and preferably Ph. D. in Bio-chemistry. Those who applied in response to Adv. No. 4/77 need not apply again but may send their updated bio-data

Qualifications—Research Associate—(i) Ph.D. in Biochemistry with experience in Lipid Metabolism/Characterisation (ii) Enzymology/Enzyme Immobilisation (iii) Ph. D. in Physics with experience in retinal receptors on optical wave guides (iv) Ph. D. in Physics or Biophysics with experience of excitation dissociation work in biologically important materials or organic solids. Some knowledge in quantum biology, computer programming and electronics will be an added advantage.

Senior Research Assistant—First Class M.Sc. in Bio-chemistry/Physics with experience as indicated for Research Associates.

XV. SCHOOL OF MATERIALS SCIENCE & TECHNOLOGY

Lecturer, Research Associate/Senior Research Assistant—Posts temporary. **Field of specialisation—Lecturer—**Polymer Science.

Research Associate/Senior Research Assistant—(i) Synthesis of monomers & Polymers (ii) Polymer blends and composites, (iii) Polymer processing (iv) Thin film technology, infrared and electro-optical, acousto-electric devices (v) Crystal growth and characterisation of materials and solid state electronic devices.

For these posts prescribed Degree should be in Chemistry/Physics or Chemical/Electrical Engineering.

XVI. SCHOOL OF SYSTEMS AND MANAGEMENT STUDIES

Research Associate/Senior Research Assistant—Post Temporary for Research Projects on—Urban Regional Transportation Studies, Water Resources Studies, Resource Engineering Project, Urban Building Systems Study.

Prescribed Degree should be in any Engineering discipline with background in Control Theory, Computer Science, Operations Research, System Engineering, Electronic Circuitry or in Operations Research, System Analysis or Statistics, or Master's Degree in Management or Behavioural Sciences. Desirable : Master's Degree in Engineering in the areas mentioned above or one to two years experience in the areas of Transportation, Water Resources, Electronic Circuitry, Town and Country Planning, Labour Productivity Studies, Sample Survey, Data Collection and Interpretation.

XVII. TRAINING AND PLACEMENT UNIT

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Qualifications—Essential—A good degree in Engineering with a minimum of 10 year's experience in teaching/training of engineering personnel and industrial liaison/or management of student affairs.

Desirable : Experience in apprentice

training and suitable qualifications in Management.

The incumbent of the post is required to handle cases of sponsored research projects and consultancy also in addition to normal duties in the T&P Unit.

XVIII. LIBRARY

Deputy Librarian

Qualifications—(a) First or Second Class M.A./M.Sc./M.Com. plus First or Second Class B.Lib. Science or Diploma in Library Science. M. Lib. Science being preferential qualification. (b) At least seven years' experience as Librarian or in a responsible professional capacity in a Library. Experience should be inclusive of 2 years in handling one or more reprographic facilities and audio-visual equipments like photo-copier, xerox, machines, projects, small offset printing machines etc. (c) Good academic qualifications and research experience (with publications). The incumbent will be required to look after the Reprographic Unit in the Library in addition to other usual responsibilities of Dy. Librarian.

Prescribed application forms may be obtained from the Assistant Registrar (E-1) Indian Institute of Technology Delhi, Hauz Khas, New Delhi—110029 either in person or by sending a self-addressed stamped envelope (10×23 cm. size) bearing postage stamps of 25p. Candidates from abroad may apply on plain paper giving an account of their academic and professional record, reprints and publications and names of at least two persons well acquainted with their professional work. Candidates selected for appointment will be required to join duty immediately or as soon as possible thereafter.

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Last date of receipt of completed application forms together with a crossed Indian Postal Order of the Value of Rs. 7-50p (Rs. 1-87p for SC/ST candidates) for posts at Sl. No. 1 to 9 and Rs. 3/- (Re. 0-75p for SC/ST) for posts at Sl. Nos. 10 & 11 is 7-6-1978 (21-6-1978 for candidates from abroad).

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Advt. No. 6 of 1978

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2. Professor of Mathematics: One post (5th Plan)
3. Professor of Mathematics: One post (permanent)
4. Professor of Economics: One post (permanent)

5. Professor of Political Science: One post (5th plan). Specialisation : Political Theory.

6. Reader in Mathematics: One post (Temporary). Specialisation in Applied Mathematics.

7. Reader in Economics: One post (5th plan). Specialisation in Macro Economics including growth and planning.

8. Reader in History: One post (5th Plan). Specialisation in World History with specialisation in Social and Economic Development.

9. Reader in Political Science: One post (permanent). Specialisation: International organisation and relations including Indo-Bangla Desh relations.

10. Reader in Zoology: One post (5th plan). Specialisation: Ecology.

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12. Lecturer in Economics: One post (Permanent), Specialisation: Public Economics.

13. Lecturer in Zoology: One post (Permanent). Specialisation: Special Training in Animal Genetics.

14. Lecturer in Anthropology: One post (Permanent). Specialisation: Social Anthropology.

15. Lecturer in Physics: Two posts (Temporary). Specialisation: Theoretical Physics-Quantum field theory or Plasma Physics or Astrophysics.

16. Lecturer in French: One post (5th plan).

17. Lecturer in Russian: One post (5th plan).

18. Lecturer in Political Science: One post (Temporary). Specialisation: Public Administration.

19. Lecturer in Commerce: One post (Permanent). Specialisation: Business Administration and/or Business Environment.

20. Lecturer in Journalism: One post
Scales of Pay

Professor—Rs. 1500-60-1800-100-2000-125/2-2500/-

Reader—Rs. 1200-50-1300-60-1900/-

Lecturer—Rs. 700-40-1100-50-1600/-

All posts carry usual allowances admissible under the University rules in force from time to time.

In a case where specialisation has not been mentioned against a post candidates should state their areas of specialisation at the Master's and Doctor's degree levels.

Essential Qualification

PROFESSORS (Arts & Science)—(a) A recognised scholar in the subject with Doctor's degree or equivalent published work (b) Continuous research work of merit as evidenced by published papers in standard journals or published work of merit, (c) Experience of 10 (ten) years post-graduate teaching or 15 (fifteen) years Honours teaching and (d) Experience in guiding and promoting research.

Note: In case of a candidate of exceptional abilities with outstanding research contributions the requirement of teaching experience may be suitably relaxed.

READER : (Arts & Science) : (a) A Doctor's degree or published work of an equivalent high standard. (b) Consistently good academic record with

first or High Second Class (B+) Master's degree in a relevant subject or any equivalent Degree of a foreign University (c) Evidence of continuous research and (d) Experience of 5 years' Post-graduate teaching or 8 years Honours teaching.

LECTURER (Arts, Science & Commerce) : (a) Doctor's degree or published work of an equally high standard and (b) Consistently good academic record with first or high second class (B+) Master's degree in a relevant subject or an equivalent degree of a foreign University.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent published work is not available or is not considered suitable a person possessing a consistently good academic record, (due weightage being given to M. Phil or equivalent degree or research of quality) may be appointed on the condition that he will have to obtain a Doctor's degree or give evidence of published work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

In the case of lecturers in Russian and French, if a candidate with Master's degree in the subject is not available a candidate with a 2-year postgraduate diploma in the subject may be considered. Preference will be given to a candidate having experience of teaching the subject.

LECTURER (Journalism)

Candidate must have good academic record with at least high Second Class Master's degree in a subject with a degree or diploma in journalism. Preference will be given to those who have practical experience in a daily Newspaper in the editorial and/or production side for not less than 5 years.

Applications in plain paper in quadruplicate giving full bio data including (1) Name in full (in block letters), (2) Father's name (3) Date of birth by the Christian era (4) (a) Permanent residence and address (in full), (b) Present address (in full), (5) Present occupation if any and name of employer, (6) Present salary drawn (if any) (7) Detailed academic career with mark-sheets and subjects studied (including Honours) in degree and post-graduate courses from Matriculation/Higher Secondary/High School Leaving Certificate Examination onwards and copies/reprints of research contributions, (8) Name and address of two referees not related to candidate together with an application fee of Rs. 10 (ten) (Rs. 7-50 in case of Scheduled caste/Scheduled tribe candidates) by **CROSSED INDIAN POSTAL ORDER** drawn in favour of Gauhati University payable at the Gauhati-781014 post office should be sent in an

inner sealed cover superscribed application for post of (name of post applied for) Advt. No. 6 of 1978 enclosed in an outer cover addressed to Sri K. C. Bhattacharyya, M.A., Registrar, Gauhati University, Gauhati-781014 to reach him not later than 15th June 1978

The number of this advertisement and name of the post applied for must be referred to in the application. Persons in employment should apply through proper channel or with a no-objection certificate from the present employer.

The University has accepted the principle of reservation of posts for Scheduled caste and Scheduled tribe candidates according to the norms of the State Govt. Candidates should submit necessary certificate from the Deputy Commissioner/Dist. Magistrate if they belong to Scheduled Caste or Scheduled tribe.

Candidates will be required to appear at an interview if and when called for.

Canvassing directly or indirectly will be a disqualification.

LUCKNOW UNIVERSITY

Advertisement No. 9/1978

Applications are invited for the following posts:

Professors in the Grade of Rs 1500-60-1800-100-2000-125/2-2500

1. One temp. Professor of Zoology
2. One Professor of Hindi (Plan Post)

Qualifications Essential

1 (a) A doctorate in the subject of study concerned or a published work of a high standard in that subject; and

(b) Consistently good academic record (that is to say, the overall record of all assessments throughout the academic career of a candidate) with first class or high second class (that is to say with an aggregate of more than 54% marks) Master's degree in the subject concerned or equivalent degree of a foreign university in such subject.

Where the Selection Committee is of the opinion that the research work of a candidate, as evidenced either by his thesis or by his published work, is of a very high standard, it may relax any of the qualifications specified in sub-clause (b) of clause 1.

2. Experience of teaching post-graduate classes for not less than seven years and/or having conducted and successfully guided research work for seven years in a recognised institution and having published work of high standard in the subject concerned.

Preferential

High Academic distinctions.

Readers in the grade of Rs 1200-50-1300-60-1900

3. One Reader in Public Administration
4. One Reader-cum-Joint Director in the Centre for Research & Training in Rural Administration, Department of Public Administration
5. One Reader in Zoology
6. One Reader in Geology (Plan Post)
7. One Reader in Geology

(Continued on next page)

ANDHRA UNIVERSITY

Advertisement No. 2/78

Applications in the prescribed form are invited for the following posts so as to reach the Registrar, Andhra University, Waltair, on or before 19.6.1978. Each application shall be accompanied by a crossed Indian Postal Order for Rs. 10/- (Rupees ten only) or a Bank Receipt remitting that amount in the State Bank of India to the credit of Andhra University General Account (Ordinary) towards the Registration fee for the application.

Department (1)	Subject (2)	Professor (3)	Reader (4)	Lecturer (5)
1. Civil Engineering	Geo-Engineering	1	—	2 (Tech. Assts. in Geophysics)
2. -do-	Buildings	1	—	—
3. -do-	Public Health/Structures/Hydraulics/Soils	1*	—	—
4. -do-	One in Hydraulics One in Architecture & Allied subjects, One in Soil Mechanics, One in Structures.	—	4	—
5. Electrical Engineering	Telecommunication Engineering.	1	—	—
6. -do-	One in Electronic Circuits One in Microwave Engineering, One in Electronic Devices	—	3	—
7. -do-	Electronics & Communications.	—	—	2
8. -do-	Computer Technology	1	—	—
9. -do-	One in Computer Hardware, One in Computer Software	—	2	—
10. -do-	One in Power Electronics/Instrumentation, One in Power systems/Control systems.	—	2	—
11. -do-	Power/Control Systems Engineering/Machines	1+1*	—	2*
12. -do-	Power Systems	1	—	—
13. Mechanical Engineering.	Industrial Engineering	1	2	—
14. -do-	Marine/Mechanical Engineering.	1	2	4
15. Chemical Engineering.	One in Process Control Engineering, One in Petroleum Refinery Engineering,	2	—	—
16. -do-	Chemical Engineering/Technology.	2	—	—
17. -do-	Process Control Engineering/Energy Engineering.	—	3	—
18. -do-	Petroleum Refinery Engineering.	—	1	—
19. -do-	Chemical Engineering/Technology.	—	—	4
20. Pharmaceutical Sciences.	Pharmacology	1	—	1
21. -do-	Fermentation Technology.	—	—	2
22. -do-	Pharmacy	1	1	—
23. -do-	One in Pharmaceutics One in Pharmaceutical Chemistry	—	2	—
24. -do-	Pharmacognosy and Phytochemistry	—	—	1
25. Bio-Chemistry.	Bio-Chemistry	—	—	1*
26. Law	Law	—	—	—
27. Physics	Space Sciences	—	2	2
28. Sociology	Criminology	1	—	—
29. Geology	Geo-chemistry	1	—	—

	(1)	(2)	(3)	(4)	(5)
30.	Hindi	Hindi	1	—	—
31.	Sanskrit	Sanskrit	1	—	—
32.	-do-	Tarka Vedanta	—	—	2
					(including one Pandit).
33.	A.U.P.G. Courses, Nuzvid.	Applied Mathematics	1	—	2
			(In Bio-Statistics or Operational Research or Quality control).		
34.	-do-	Physics	1	—	2
			(Applied Electronics)		
35.	-do-	Chemistry	1	—	2
			(Synthetic Organic Chemistry)		(One in Organic Chemistry One in Physical Chemistry)
36.	A.U.P.G. Courses, Kakinada.	English	—	1	3
37.	-do-	Politics & Public Administration	1	—	3
38.	A.U.P.G. Courses, Srikakulam	Economics	1	—	2
39.	-do-	Rural Development	1	—	2
40.	Commerce Dept.	Commerce	1	1	1
41.	-do-	Management Studies	2	—	—
		*Temporary Vacancies.			

Note :

The rule of reservation for Scheduled Castes/Scheduled Tribes/Backward Communities candidates is applicable for the posts of Lecturers.

Scales of Pay

Professor: Rs. 1500-60-1800-100-2000-Assessment-125/2-2500.

Reader: Rs. 1200-50-1300-60-1900.

Lecturer: Rs. 700-40-1100-50-1600.

(2) The details of qualifications prescribed in respect of each post including the particulars and precise branch of specialisation which is needed and also the preferential qualifications considered desirable will be furnished alongwith the application form.

(3) Requisition for the application forms may be made to Sri M. Chakravarthy, Deputy Registrar, Andhra University, Waltair accompanied by a self-addressed and stamped envelope and a State Bank of India challan or crossed Indian Postal Order for one Rupee. The University reserves the right to fill or not to fill all or any of the posts. The cover containing the applications should be superscribed as "APPLICATION FOR APPOINTMENT TO THE POST OF

P. Hanumantha Rao
ACTING REGISTRAR

(Contd. from previous page)

Qualifications

Essential

1. (a) A doctorate in the subject of study concerned or a published work of a high standard in that subject; and

(b) Consistently good academic record (that is to say, the overall record of all assessments throughout the academic career of a candidate) with first or high second class (that is to say, with an aggregate of more than 54% marks) Master's Degree in the subject concerned or equivalent degree of a foreign university in such subject.

Where the Selection Committee is of the opinion that the research work of a candidate, as evidenced either by his thesis or by his published work is of a very high standard, it may relax any of the qualifications specified in sub-clause (b) of clause 1.

2. (a) Experience of teaching honours/post-graduate classes for not less than

five years and published research work of high standard in the subject;

(b) For post of Reader in Geology at Sl. No. 6 specialization in Structures Metamorphism/Stratigraphy/ Eco-Geology.

Preferential

Experience of teaching post-graduate classes and guiding research.

Lecturers in the grade of Rs 700-40-1100-50-1600

8. Three Lecturers in Social Work

9. One Lecturer in Arabic

10. One temporary Lecturer in Arabic for teaching Modern Arabic Course

11. One temporary Lecturer in Education

12. One Lecturer in Hindi

13. Two temporary Lecturers in Geology

14. One Lecturer in Physics

15. Three Lecturers in Biochemistry

16. Three permanent and two temporary Lecturers in Botany

17. Three Lecturers in Zoology

Qualifications

Essential

1 (a) A doctorate in the subject of study concerned or a published work of a very high standard in that subject, and

(b) Consistently good academic record (that is to say, the overall record of all assessments throughout the academic career of a candidate) with first class or high second class (that is to say, with an aggregate of more than 54% marks) degree in the subject concerned or equivalent degree of a foreign university in such subject.

Where the Selection Committee is of the opinion that the research work of a candidate, as evidenced either by his thesis or by his published work is of a very high standard, it may relax any of qualifications specified in sub-clause (b) supra.

Preferential

Experience of teaching degree/honours/post-graduate classes for two years.

General

For purposes of qualifications required for the above posts, the degree obtained in a subject taught in a department which is subsequently constituted into separate departments, shall be deemed to be degree in the subject concerned for the newly constituted departments.

Benefits of Provident Fund available as admissible under the rules on confirmation for permanent posts. Period of probation for permanent posts is one year. It is not necessary to fill any/all of the advertised posts.

For the posts of Lecturers, other things being equal preference will be given to Scheduled Castes/Tribes candidates, who are considered fit. Such candidates should indicate in their applications that they belong to Scheduled Castes/Tribes, attaching certificate from the District Magistrate of the District to which they belong. No other certificate for this purpose will be entertained. In case of Scheduled Castes/Scheduled Tribe candidates interviewed by the Selection Committee, if suitable candidates are not available for appointment to the posts of Lecturers, the Selection Committee may recommend appointment of suitable candidate as Research Associate in the scale of Rs 700-1300 for a period upto three year and these persons could later compete for the posts of Lecturers as and when vacancies occur.

Applications on the prescribed form (available on request, accompanied with a self-addressed envelope of size 23cm x 10cm free of cost, from the Office of the Registrar) with recent testimonials, publications etc. should reach the Registrar, Lucknow University, by Friday, June 16, 1978. The candidates who are in service must send their applications through proper channel. Application Forms to outstation candidates will be issued by post upto Friday, June 9, 1978..

B.N. Singh
REGISTRAR

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Advt. No. AO/3/1978

May 18, 1978

Applications are invited from qualified persons for filling up the following posts including lien or leave vacancies, if any temporarily in the University of Agricultural Sciences, Bangalore :

Sl. No.	Name of the post	No. of posts	Place	Scale of pay
1	2	3	4	5
1.	Professor of Agricultural Microbiology	1	Hebbal	1500-60-1800-100-2000-125/2-2500
2.	Professor of Fish Processing Technology	1	Mangalore	-do- 1200-50-1300-60-1900
3.	Associate Professor of Statistics	2	Dharwar & Hebbal	
4.	Associate Professor of Fishery Statistics	1	Mangalore	-do-
5.	Associate Professor of Child Development & Family Relations	1	Dharwar	-do-
6.	Assistant Professor of Agril. Microbiology	2	Hebbal & Dharwar	700-40-1100-50-1600
7.	Assistant Professor of Agril. Engineering	1	Hebbal	-do-
8.	Lady Physical Culture Instructor	1	Dharwar	275-25-550 (unrevised)
9.	Chief Scientific Officer (Animal Sciences)	1	Dharwar	1500-60-1800-100-2000-125/2-2500
10.	Microbiologist (Fermentative production of Enzymes useful in Fish Processing)	1	Mangalore	1200-50-1300-60-1600
11.	Associate Professor (Establishment of Diagnostic Laboratory, KDDC Project)	1	Mysore	-do-
12.	Assistant Agronomist (Horticulture) AICRP on Potato Improvement)	1	Madenur	700-40-1100-50-1600

Note :

1. The prescribed application form along with the qualifications prescribed for the above posts and the instructions sheet can be had in person from any of the following Offices of the University on presentation of a crossed postal order for Rs 2/- drawn in favour of the Comptroller, UAS, Bangalore:

(a) Administrative Officer, GKVK Campus, Bangalore-560065

(b) Director of Instruction, Veterinary College, Hebbal, Bangalore 560024

(c) Director of Instruction, Agricultural College, Dharwar-580005

(d) Director of Instruction, Fisheries College, Mangalore.

(e) Principal, Agricultural Engineering Institute, Raichur-584101

(f) Chief Scientific Officer, Regional Research Station, Mandya.

2. Applications can be had by post only from the Office of the Administrative Officer, University of Agricultural Sciences, GKVK Campus, Bangalore 560 065, enclosing a crossed postal order as indicated above and also enclosing a self-addressed stamped (0.45 ps.) envelope. The last date for receipt of requisitions by post is 13.6.1978.

3. The University may keep one or two suitable persons recommended by the Selection Committees in reserve for posts of similar qualifications.

4. In making appointments to the post of Teachers, reservation of posts to the persons belonging to S.Cs., S.Ts. and other Backward Classes shall be made to the same extent as determined by the State Government from time to time.

5. All Ex-servicemen and members of the families of Defence personnel killed, or disabled in action, are exempted from payment of the application fee as mentioned above. However requisitions for application forms from such persons should accompany necessary certificates in this regard.

6. The filled in application forms should reach the Administrative Officer, UAS, GKVK Campus, Bangalore 560065, on or before 20.6.1978. Applications received after this date shall summarily be rejected.

Administrative Officer

ALIGARH MUSLIM UNIVERSITY
Advertisement No. 8/78-79

Applications, on the prescribed form, are invited for the following posts—Plan posts.

Candidates must possess Medical Qualifications, included in 1st or 2nd schedule or part II of the 3rd Schedule (other than licentiate qualifications) of the Indian Medical Council Act, 1956. Holders of educational qualifications included in Part II of 3rd Schedule should fulfil the conditions stipulated in Section 13(3) of the Indian Medical Council Act, 1956. Must possess a basic University or equivalent qualification entered in Schedules under State/Central Medical Registration Act.

1. Professor of Pharmacology, Scale Rs 1500-60-1800-100-2000-125/2-2500 plus allowances.

Qualifications

M. D. (Pharmacology)
M. D. (Pharmacology & Therapeutics)
M. Sc. (Pharmacology)
Ph. D. (Pharmacology)
D.Sc. (Pharmacology)
As Associate Professor/Reader in Pharmacology for five years in a Medical College.

Desirable

Experience in Neuropharmacology. Published research work.

2. Professor of Biochemistry, Scale Rs 1500-60-1800-100-2000-125/2-2500 plus allowances.

Qualifications

M.D. (Bio-Chemistry)
M. Sc. (Medical Bio-Chemistry)
Ph. D. (Bio-Chemistry), D.Sc. (Bio-Chemistry)
As Reader in Bio-Chemistry for five years in a Medical College.

Desirable

The applicant should have made significant contributions, supported by published work, in the field of Biophysical Chemistry e.g. Biological and molecular characterization of Biomacromolecules, structural basis of biological properties of enzymes and proteins, conformational and structural transitions in proteins.

3. Reader in Pharmacology, Scale Rs 1200-50-1300-60-1900 plus allowances.

Qualifications

M.D. (Pharmacology)
M. D. (Pharmacology & Therapeutics)
M. Sc. (Pharmacology)
Ph. D. (Pharmacology)
D. Sc. (Pharmacology)

As Assistant Professor/Lecturer in Pharmacology for three years in a Medical College.

Desirable

Experience in Neuropharmacology. Published research work.

4. Reader in Biochemistry, Scale Rs 1200-50-1300-60-1900 plus allowances.

Qualifications

M.D. (Bio-Chemistry)
M.Sc. (Medical Bio-Chemistry)
Ph.D. (Bio-Chemistry)
D.Sc. (Bio-Chemistry)

As Lecturer in Bio-Chemistry for 3 years in a Medical College.

Desirable

The applicant should have research experience in Clinical Bio-Chemistry.

5. Lecturer in Pharmacology, Scale Rs 700-40-1100-50-1600 plus allowances.

(Continued on page 969)

Advertisement No. 9769/TDS Dt. 6.5.1978

Applications in the prescribed form are invited for the following teaching posts in the University Post-graduate Departments/University College of Engineering, Burla and L.R. Law College, Sambalpur.

I. Category-A

Professor—One each in Political Science and Home Science.

Reader—One each in Oriya, Economics, Chemistry and two in Statistics.

Lecturer—One each in English and Statistics.

Category-B

Professor—One in Electrical Engineering and one in Electronics and Tele Communication Engineering.

Reader—One each in Civil, Mechanical, Electronics and Tele Communication Engineering and two in Electrical Engineering.

Lecturer—One each in Electrical, Electronics and Tele Communication, Mathematics and Mechanical Engineering (Temporary).

Category-C

Reader in Law—One Post

II. Scales of Pay

Professor—Rs 1500-60-1800-100-2000-125/2-2500

Reader—Rs 1200-50-1306-60-1900

Lecturer—Rs 700-40-1100-50-1600

III All the posts carry usual dearness allowance and C.P.F.-cum-gratuity benefits as would be determined by the University from time to time.

IV. The age of retirement is sixty years.

V. (a) Qualification: Essential for Category 'A' and for the post of Lecturer in Mathematics in Category 'B'.

Lecturer

(i) A consistently good academic record with first or high second class Master's Degree in relevant subject or equivalent foreign degree with grade B+ or 54% of marks.

(ii) A Doctorate Degree or published work of equally high standard.

N.B. Consistently good academic record means the candidate must have secured on an average, 50% marks in the two examinations taken together prior to the Master's Degree Examination.

In case a suitable candidate possessing a Doctorate Degree or equivalent published work is not available, a person possessing a consistently good academic record (due weightage being given to M.Phil.) or equivalent degree or research work of quality may be appointed on the condition that he will have to obtain a Doctorate Degree/Produce evidence of published work of equivalent high standard within 5 years of his appointment failing which he will not be able to earn future increments until he fulfils this requirement.

Reader

(i) Good academic record with a Doctorate Degree or equivalent published work

(ii) Evidence of being engaged actively in research.

(iii) Five years experience of teaching and/or research out of which at least three years shall be as Lecturer in the University Department/College at P.G. level.

Professor

published work of high quality and actively engaged in research.

(ii) Minimum experience of 10 years in teaching and/or research out of which at least 5 years must be in teaching at Postgraduate level.

(iii) Experience in guiding research at Doctoral level.

A Professor may be appointed on contract basis for a specified period.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge may be appointed as Professor by negotiation.

(b) Qualification essential: For Category 'B'**Professor**

1. First class Master's Degree in appropriate field with a minimum of 10 years experience in teaching and/or research out of which at least 5 years shall be in teaching in an Engineering College/University.

2. Experience in guiding research.

3. Professional/Scientific work of outstanding merit will be preferred. A professor may be appointed on contract basis for a specified period.

OR

An outstanding scholar with established reputation who has made significant contribution in the field of Engineering and Technology may be appointed as Professor by negotiation.

Reader

1. A first class Master's Degree/Doctorate Degree in the appropriate field with a minimum of five years experience in teaching and/or research out of which at least three years shall be in teaching in an Engineering College/University.

2. Experience in conducting and guiding research.

3. Candidates with outstanding teaching, research experience and Doctorate Degree or published work of equal standard will be preferred.

Lecturer-Essential

(Except in Mathematics)

A consistently good academic record with a Master's Degree in the appropriate field with grade B+ or 55% of marks.

(Consistently good academic record means that the candidate must have secured an average of 54% of marks in all Examinations taken together prior to the Master's Degree Examination.)

Desirable

Industrial and/or Research experience. Candidate with Doctorate Degree or Published work of equal standard will be preferred.

In case suitable candidates possessing Master's Degree are not available, a candidate possessing a 1st Class Bachelor's Degree with a consistently good academic record may be appointed on the condition that he shall have to obtain Master's Degree in Engg. within five years of his appointment failing which he will not be considered to be eligible to earn future increments until he fulfils this requirement.

(c) Qualification for post in Category 'C'**Reader—Essential**

(i) A Master's Degree in Law.

(ii) Five years experience in teaching law research, and/or professional experience out of which three

years must be in teaching Law in a Law College.

(N.B. Research in this connection means research at the Post-LLM level).

Desirable

Doctorate Degree in Law or equivalent published work of high standard.

Specialisation required**VI. Category 'A'**

Reader in Economics: Public Finance/Public Economics.

Reader in Chemistry: In any branch of Chemistry (Physical, Organic and Inorganic).

Reader in Statistics: Probability theory and Stochastic Process, Numerical Analysis/Theory of games and decision functions/Statistical Inference/Probabilistic number Theory.

Category 'B'

1. Professor of Electrical Engineering: Control System.

2. Professor of Electronics and Tele Communication Engineering.

In one or more of the following fields: Electrical and Electronics measurements and Instrumentation/Communication Theory/Microwave Engineering/Solid State Electronics, Radio/TV/Radar Engineering.

3. Reader in Civil Engineering: In any field of Civil Engineering preferably in Hydraulics and Irrigation Engineering.

4. Reader in Mechanical Engineering: Any of the following branches: Machine Design, Heat Power Engineering, Industrial Engineering, Production Engineering, Fluid Power Engineering, Mechanical Engineering Instrumentation and Control.

5. Reader in Electrical Engineering: One in Power Electronics; One in Electric Drives.

6. Reader in Electronics and Tele Communication Engineering: In any field of Electronics and Tele Communication Engineering.

7. Lecturer in Electrical, Electronics and Tele Communication and Mechanical Engineering: In any field of the concerned Engineering branch.

Seven copies of the application forms will be supplied from the University Office to each candidate in person on cash payment of Rs 10 (Rupees Ten) only. Candidates intending to receive forms by post are required to send (a) Crossed Postal Order of Rs 10 payable to the Finance Officer, Sambalpur University, Jyoti Vihar, Burla (b) a self addressed envelope (23 cm x 10 cm) with postage stamps worth Rs 3.30 P affixed to it with the words "Application Form for Teaching Posts in Sambalpur University" superscribed on it. Money Order/Cheque will not be entertained.

The last date of receipt of applications in the Office of the University at Jyoti Vihar, Burla, Sambalpur (Orissa) is 30.6.78. The candidates will be required to appear for an interview before a Selection Committee at their own expenses.

Issue of this advertisement does not make it binding on the University to make the appointment.

All Communications should be addressed to the Registrar by designation only.

J. Mohapatra
Assistant Registrar (E)
For REGISTRAR

**PANJAB UNIVERSITY
(CHANDIGARH)**

Advertisement No. 12/78

Applications are invited for the following posts so as to reach the Registrar, Panjab University, Chandigarh along with postal orders for Rs. 10/- by 15.6.1978.

1. Lecturers in History—6
2. Lecturer in Organic Chemistry—1

Pay-scale: Rs. 700-40-1100-50-1600

Qualifications

Essential

- (a) A Doctor's degree or research work of an equally high standard; and
- (b) Consistently good academic record with 1st or high second class i.e. 55% marks or more (B in the seven point scale) Master's Degree in a relevant subject or an equivalent degree of a foreign University. Having regard to the need for developing inter-disciplinary programmes, the degree in (a) and (b) above may be in relevant subject. The consistently good academic record at Pre-Master's level would be interpreted as an average of 50% or above at the two examinations prior to Master's examination. Provided that if the Selection Committee is of the view that research work of a candidate as evident either from his thesis or from his published work is of a very high standard, it may relax any of the qualifications prescribed in (b) above. Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable a person possessing a consistently good academic record (weightage being given to M. Phil. or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Desirable

Lecturers in History

Specialisations

Post No. 1: Western History

Post No. 2: Philosophy of History and Historiography

Post No. 3: Medieval Indian History

Post No. 4: Ancient Indian History

Lecturer in Organic Chemistry

Specialisation

Synthetic Organic Chemistry of Natural Products.

15% posts of Lecturers will be reserved for the members of the scheduled castes and 2% for the members of the scheduled Tribes, but these will be filled up by others if no suitable scheduled-castes/Tribes applicant is available.

Persons already in service should route their applications through proper channel. Incomplete forms and those received after the due date will not be entertained. Serving employees, may, however, send their applications on the prescribed proforma direct to the University. They may route another copy through their Departments. They will be allowed to present themselves for interview only on the production of a 'No Objection Certificate' from their employers. Canvassing in any form will disqualify a candidate.

Application forms can be obtained from the Cashier, Panjab University, Chandigarh, personally on payment of Re. 1/- or by making a written request to the Finance and Development Officer, Panjab University, Chandigarh, accompanied with self-addressed stamped envelope of 23×10 cms. and a postal order for Re. 1/- drawn in favour of the Registrar, Panjab University, Chandigarh.

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**THE UNIVERSITY OF
AGRICULTURAL SCIENCES**

**Administrative Office, GKVK Campus
Bangalore 560065**

Advt. No. AO/2/1978

May 15, 1978

Applications are invited from qualified persons for filling up the following posts of Officers in the University of Agricultural Sciences:

1. Dean (one post) Hebbal: Rs 1600-100-2100
2. Comptroller (one post) Hebbal: Rs 1100-50-1300-60-1600

Note: The above scales of pay are under consideration for upward revision. The total emoluments at present on the minimum of the scales indicated above with the admissible allowances shall however be around Rs 2,080 and Rs 1,640 respectively. Higher start in the above scales is permissible in suitable and deserving cases.

The qualifications prescribed for the above posts are as follows:

1. Dean

- (a) The degree of Ph.D., or its equivalent in any of the Agricultural Sciences;
- (b) Teaching experience in any of the Agricultural Sciences for not less than ten years;
- (c) A good knowledge of the leading educational systems prevalent in the world and of possible

application under Indian conditions;

- (d) Experience in managing an educational institution of the Collegiate or/and post-graduate standard in Agricultural Sciences for not less than two years;
- (e) Significant accomplishments in the field of research;
- (f) Experience of Extension Education is desirable.

Note: 1. The qualifications may be relaxed in case of candidates otherwise well qualified and available for the post.

2. "Agriculture" as defined in the UAS Act 1963 means—the basic and applied sciences of soil and water management, crop production including production of all garden crops, animal husbandry, including dairying and veterinary science, fisheries, farm forestry, home economics, agricultural engineering and technology, marketing, processing, cooperation, land use and management and the economic and social uplift of the rural people.

2. Comptroller

- (a) Should possess a B.Com., or equivalent degree;
- (b) Should be a Chartered Accountant or/and Cost & Works Accountant either of India or England, or should have passed the Subordinate Accounts Service Examination of any State Government or Central Government, or an equivalent or higher examination and have had experience of service in Government for a minimum of ten years;
- (c) Should have served in a senior executive or independent position for at least five years in a reputed establishment or Government Organisation.

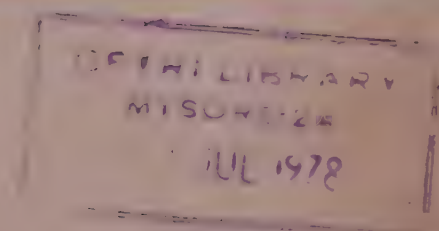
Note: The qualifications may be relaxed in case of candidates otherwise well qualified and available for the post:

1. The prescribed application form along with the other particulars relating to the duties, etc., of the posts, could be had in person from the Office of the Administrative Officer, University of Agricultural Sciences, GKVK Campus, Bangalore 560065 on presentation of a crossed postal order for Rs. 2/- drawn in favour of the Comptroller, UAS, Bangalore. Applications can also be had by post from the above Office enclosing a self-addressed and stamped (0.50 Ps.) envelope, and also a crossed postal order as indicated above. The last date for receipt of requisitions by post is 15th June, 1978.
2. Filled in applications forms should reach the Administrative Officer, UAS, GKVK Campus, Bangalore-560065 on or before June 30, 1978. Applications received after this date shall summarily be rejected.

Administrative Officer

University lews

A CHRONICLE OF HIGHER EDUCATION & RESEARCH JUNE 16, 1978 80 PAISE



• **Radio as Media Aid in
Correspondence
Education**

• **Meeting Students' Agitation
on Postponement of
Examinations**

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of the Association*

Hony. Editor: ANJNI KUMAR

Adult Literacy/Adult Education

M. V. Rajagopal*

Adult Literacy/Adult Education in India is a 30-year old problem. Smaller countries in the world with smaller resources at their disposal like Brazil, Chile, Ceylon and Tanzania have achieved far greater success in making headway in this field. Tanzania especially, under the leadership of its teacher President Julius Nyrere, has made remarkable progress in Adult Education. It is not as though no effort has been made in India, or that there are no financial resources or opportunities. The drive for Adult Education has not been made in a concerted way by the people of India. The lack of a national will as expressed by representative bodies like the Parliament and Legislatures is rather prominent. A resolution passed at a national seminar on Adult Education in 1970 at Bangalore under the Chairmanship of Prof. V.K.R.V. Rao, then Union Education Minister declared illiteracy as the 'worst humiliation' for the country. The resolution moved that all resources should be diverted to the eradication of this 'humiliation'. This was definitely an expression of the national will but it has to be translated into political action.

On a practical level in Andhra Pradesh, the Gram Shikshak Mohim Programmes were started by me in 1967 with the intention of converting illiterates into functional literates. In 1967, 3 blocks in 3 different regions of the state were selected and 6,000 illiterates were enrolled. The objective was not merely to produce a literate, but in 4 months time, enable the illiterate individual to read and write with comprehension as in class V of the primary schools, at which level literacy is expected to be irrelapsable. All the personnel involved were selected on the basis of their sense of commitment, their resourcefulness and assiduity in their work. Though a remarkable success was registered at the end of the programme, it made a very minor contribution of 1% to the total growth rate of literacy. However, the State Government appreciated this achievement and allotted another 14 blocks along with the required financial assistance. The phenomenal success of the earlier attempt, however, could not be repeated by this expansion. Since, it was on a much larger scale, the same care and attention could not be bestowed on selection of personnel. There were many levels of organisation and administration. Therefore, over-seeing the effective functioning of each unit was too arduous to be attempted by a central authority. There was also lack of dedication to the task on hand. Inevitably, the programme fell short of expectation and not more than 50% of the enrolled

(Contd. on page 989)

*Vice-Chancellor, JNTU, Hyderabad.

Radio as Media Aid in Correspondence Education

Jiwan Tewari*

In India, 24 Universities offer correspondence education to more than 80,000 off-campus students. These lessons in the mail, as they have aptly been called, broke fresh ground and brought about a mini revolution in the existing system of education. Their popularity speaks for itself.

While these broke through the traditional barriers and reached students in their home, they did not carry the warmth of the human voice. The new concept of Radio as media aid in correspondence education jumps over this barrier too. The teacher literally talks to the students—only he is not seen—which lends the process of learning a touch of wonder and excitement. The potential is immense. It is time the Radio is harnessed to the fullest to fulfil our objective of mass education.

Correspondence instruction through the AIR has to be moulded and developed according to the requirements of radio journalism so as to make it really purposeful and educative to listener-students. It may be a Radio talk, discussion, conversation, feature or a dramatised version of an event. Whatever its form, the main requirements of a good broadcast are the script, voice, delivery and presentation.

So far, Radio talks as a part of instructional programme of correspondence education have been prepared and developed by the 'correspondence' teachers themselves. These 'casual' broadcasters have to develop the craft of communicating their ideas to the listeners through simple language. Their approach should not be pedantic. Conversational and colloquial idiom with a frequent use of 'I' and 'you' in a broadcast helps. It should neither be written language nor in a day-to-day conversation style which occasionally includes half sentences, completed only with gestures. The broadcast should be in 'spoken word'. It should be smooth, not a mesh-up of interlocking phrases. It should be developed sentence by sentence so that the thought stream flows evenly. Clustering the script with too many ideas and points is avoided for it is very difficult for a listener to register all the points in his mind, through the exclusive use of auditory senses which are under great strain while listening.

Script writing for radio broadcast has, therefore, its own limitations and entails its own requirements. It is an art which is learnt and developed by corres-

pondence teacher through sheer hard work and willingness to draft, redraft and restructure his script so as to develop it into a compact and logical form. In the radio script, the 'opener, or the first paragraph 'lead' is of utmost importance. Too much material is not to be loaded in it. It is interesting enough to capture the listener's attention and sustain it on to the subsequent portions of the broadcast. It is useful to give a digest of the salient points in the end, with the central theme of the content highlighted in the closing sentence. There is specified time—normally 15 minutes allotted for each correspondence broadcast. The script has to be prepared which exactly fits in the span of time. The radio script is complete in itself and is self-sufficient in the totality of its approach. The content matter and the level of a language is in keeping with the standard and ability of the students.

The subject content is woven in a way so as to put at rest the probable question hovering in the students' mind. Superfluity and redundancy are cut to the minimum.

Given adequate treatment to the preparation of script, there follows the delivery and recording part of the broadcast. A good script can be destroyed by a bad voice or indifferent presentation. So far, it has been prerogative solely of teacher-author of the script to broadcast it. His voice may be nasal, crackling, muffled and his pronunciation, enunciation, dictation and intonation defective. Such a talk does not make any impression on the listeners. The 'correspondence' student sitting in a corner of his room, with radio tuned to the 'lesson' broadcast is not a 'captive' listener, as a regular student in his classroom is. He is free to tune off if he finds the broadcast uninteresting. A skilfully prepared script is recorded and delivered with an impressive fluency, presentation, projection, dramatisation and elocution so as to keep the interest of the listener alive throughout the broadcast. Writing a radio script is relatively easy but delivering the same on the radio is an exercise of a different and difficult kind, in which all teachers may not be well equipped unless specially trained.

The remedy lies in proper and vigorous training under expert guidance or if the teacher-author does not have a radio-genic voice, the radio-staff may broadcast the talk. Even the multi-voice approach should be encouraged. In lessons on literature, particularly in talks on poetry and drama, the use of more than one voice preferably female and male, would make the lesson more interesting and understandable. Narration and quotation can better be separated from each other by introducing another speaker.

If the radio is to be turned into an effective media aid for relay of lessons to distant students, the quality of concerned broadcasts should be of a very high order from the point of subject content, the level of language and standard of presentation and delivery. To achieve this, there is need for proper screening of the talks. The talks for broadcast

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should not be distributed as a routine amongst the 'correspondence' teachers. These should be entrusted to good script writers with a radiogenic voice. Each talk should first be screened by the faculty members of that particular subject. It should finally be scrutinised by the Instructional Design Team before it is recorded for broadcast.

With all these efforts made at the Directorate itself for the selection and screening of the script-writer and the speaker, the producer from the AIR has also his own role to play. The success of a radio broadcast depends as much on the producer as on the script-writer and the speaker. The producer must provide proper guidance and necessary rehearsal before the speaker goes on the AIR.

Radio talk feature cannot be substituted for correspondence lesson, for all the 'correspondence' students cannot afford and avail the radio facilities. Nor can it be a corollary of the lesson. The lesson and the broadcast have independent identities. They are not interdependent. However, the reading material or the relevant lessons are despatched to the students well before the radio talk. This helps the listener to develop a clearer understanding of the subject.

Another very important point which helps improve the radio medium into meaningful and academically significant teaching unit is an effective system of feed-back from students. For this an effective collaboration of the Directorate of Correspondence Courses with the Audience Research Unit of the AIR has to be established. Questionnaires jointly prepared by them and feedback thus secured will go a long way in making radio lessons more useful for distant students. □

Adult Literacy/Adult Education

(Contd. from page 987)

men and women could be made literate according to the level stated earlier.

The above practical experience is some proof that if a mass campaign is launched, it has its inevitable risks. This has to be guarded against by careful planning, implementation and concurrent evaluation. Adult Education is a problem of massive dimensions. Hence, the need for intensive effort on a national scale. The Government plays a pivotal role in giving this movement the requisite drive and initiative. In this connection, the statement made by the Prime Minister Sri Morarji Desai during the recent meeting of the National Board of Adult Education, that a head start should be made in this direction in not more than five years, is a welcome one.

In the wake of the Prime Minister's statement, the objectives of the present seminar attain great importance. However, one is left with mixed feelings

of happiness as well as apprehension. While all assistance and resources are made 'available' nothing concrete can be achieved unless the funds are actually received in good time. The willingness; the passion for learning is there among the people but this asset has not been capitalised so far.

Among other factors which have a vital impact on the growth of a literate Society in India is the Elementary School and the Quality of Education imparted in it, especially from Classes 1 to 5. It is a paradoxical but nonetheless sad fact that in the last 30 years, the drop-outs from the lower Elementary School have swelled the numbers of the illiterate; otherwise it is difficult to explain how, in absolute numbers, the illiterate have trebled from what they were in 1947. The Universal Compulsory Education Scheme has failed by both Qualitative and Quantitative Criteria.

Another serious deterrent to the spread of Adult Literacy/Adult Education is the formal school which is still going strong despite the realisation of its organisational rigidities and instructional inadequacies. The bureaucracy which controls them can hardly be expected even to make a beginning in changing the formal school, leave alone heading a revolution for the non-formal ideal. Changes, if any, made so far, are weak and half-hearted tinkering with the formal pattern.

Apart from these bottlenecks which are more negative in character, the positive need is to put in the required effort on a national scale for the liquidation of illiteracy. Like its political counterpart, the banishment of poverty, it is no easy task and it is only those who lack in real intellectual comprehension of its magnitude or personal conviction that will indulge in slogans and speeches as substitutes for thinking and action. Time-limits like 5 years or ten years may have the advantage of focussing the magnitude of the problem or accelerating the pace of the effort but not slashing in any impressive manner, its dimensions. The entire nation has to be commissioned for the task, by which I mean the universities, statutory autonomous bodies set up for the purpose, local bodies, political parties, Social Service Organisations, Voluntary agencies and Government departments. If I have mentioned Government departments last, it is not because I underestimate their importance but because I am anxious that the role of the Government in such nation-building projects should be promotional and not operational.

The universities with which we are concerned can play a notable role. It is only recently that Indian Universities have come out of their academic shells and attempted some involvement with the country and its problems. The National Service Scheme is probably its strongest instrument in this regard and I trust the N.S.S. of J.N. Technological University which did such notable work this year in Cyclone relief, will take up Adult Education in the next academic year. □

Need to take up Management Education

It is an established fact that the requirements of managerial talent in our country in the next decades will be considerably higher than what the existing training institutions, viz. Institutes of Management and Faculties of Business Administration in the universities can provide.

Various statistical estimates made of the number of managers that would be required during the next 25 years differ considerably; but there is no doubt whatsoever that taking even the modest estimate, the existing facilities available in the country for the training of managers need to be multiplied at least ten times to meet the requirements of the future. The training institutions envisaged are not merely the Institutes of Management and the universities which train prospective managers before they are employed, but also organisational training institutions which impart in-service management training.

While the defence and other major services of Government of India have their own academies of staff colleges, these are not large enough or sufficient in numbers to meet the full requirements even of their own organisations.

There are many services, public sector organisations, and nationalised concerns which do not have facilities for training of their managerial cadre to any level of comparison with similar organisations in developed countries. With the current trend of Government undertaking more and more responsibilities for business administration, the immediate and most important need is, and will continue to be for some time, not merely finance but managerial competence. In fact, the very paucity of financial and managerial resources accentuates the need for the most effective management resources available so as to get the highest productivity from these enterprises. Apart from the requirements of the Government Departments and public sector undertakings, large as they will be, the requirements of the private sector will also be very considerable.

Management training is a comparatively new field of activity in India as compared to the scientific and technological fields which have had an earlier start and which have therefore reached a fairly advanced stage both in 'quality and quantity' i.e. in the level of research and the extent of practical application. The main source of recruitment of managerial talent so far has been foreign trained young executives, who will however no longer be available, except in very small number.

Even the large industries as well as medium size business, and certainly the small-scale industries, will therefore have to depend largely upon indigenous human resources. It is therefore, necessary for the country to be self-sufficient in the 'production' of managerial talent as a measure of self-reliance in

industrial growth. Having accepted this position, the next logical step is to examine the ways and means of utilising the existing managerial talent available in the country in a 'chain-reaction' process of producing the requisite number of managers, at least at the lower and middle management level, in the shortest possible time.

The strategy for this should be the same as has been used by countries like Japan, not only in the field of business management but also in the fields of science and technology. While an affluent country can afford to recruit highly trained management personnel even in comparatively lower ranks of their executive cadre, this rather extravagant process will have to be discarded by us, and a more economical method of self-reliance for the training and development of managers in the public and private sectors will have to be used. While those who are recruited in the managerial cadre must, no doubt, possess the basic aptitude and talent for management, they need not have the advanced knowledge or sophistication in the use of all the management techniques as taught in the Institutes of Management in India or business schools abroad.

This envisages a 'hierarchy' of need-based management techniques to be established, ranging from the simplest and most readily useful ones for use at the lowest level, to the most sophisticated ones to be used at the highest level and a corresponding 'hierarchy' of training techniques to be established for use at different levels. It has to be remembered in this connection that even a very good manager would not necessarily make a good management trainer, in the same way as a top-ranking player does not necessarily make a good coach. Management trainers have, therefore, to be trained, just as teachers have to be taught the art and science of teaching.

The first step in the direction 'of meeting the requirements of management education is, the establishment of a National Institute of Management Training. This should essentially be the apex institution for 'training of trainers' and should therefore have a faculty consisting of persons of renowned ability in the field of management training. It will be extremely important to ensure that the assignment not only provides sufficient incentive for them to work wholeheartedly in the nation-building activity of training a large number of trainers, but will also provide the atmosphere in which this can be carried out effectively.

The second measure in this direction is the establishment of a number of regional institutes of management training, which will primarily provide post-graduate courses in management training meant for those who would like to take up a career in management training, and seek employment in various institutes and other bodies conducting management courses. The location of regional institutes should, therefore, be decided with particular reference to the industrial activity and growth potential of the region so that the requirements each region are adequately met.

The third step in this hierarchy of management

training centres would be the setting up of faculties of business administration in all the universities, with both degree and diploma courses, not only in business management but also in management training, which will meet the requirements of trainers for supervisory and lower level workers.

The main idea of this three-tier training scheme is the most economical use of the available management training talent so that the highest available talent is utilised for the training of trainers, thus hastening the process of transmitting the knowledge and experience of business administration to the largest possible number of trainees at different levels, tailoring the training technique to the requirements of

the level of the trainees. There is a very wide range of management training techniques in use at the advanced training institutions from the simplest and oldest method of lectures to the most complex ones like 'sensitivity/laboratory' and 'games'.

It is not possible for all the sophisticated technique to be used for the training of managers at the comparative lower levels in the absence of well-qualified trainers, nor is this really necessary. What is necessary and possible under this plan is to match the level of management training with the level of management trainees and use appropriate training techniques accordingly.

(Courtesy: Deccan Herald)

Meeting Students' Agitation on Postponement of Examinations

V. Natarajan*

Universities in India today are at cross roads. While there are many reasons for the troubles faced by the universities, it is very often the inability and a lack of ingenuity to face squarely the problems posed by the teachers, students, parents and politicians.

In any university, the academic year begins (is supposed to begin) round about the middle of July. A few hectic days at the beginning marked by initial enthusiasm of students, teachers, and administrators are only to be followed by difficult days of student elections to various bodies, very closely accompanied by teachers' associations election and the concomitant of politically motivated outbursts resulting in wastage of precious working days of teaching and learning. The time of the year is January by now, and things appear to settle down when the biggest hurdle (the ides of March) of examinations begins to bother the minds of teachers, students and parents alike. The worst affected of course are the students who invariably resort to agitation to postponement of the evil, the examinations.

If one goes to the root-cause of the dread of examinations, one quickly discovers that it is the invalid, the unreliable and the meaningless nature of these examinations. Most of these examinations are dominantly oriented, to test memory, storage of information and retrieval of the material at and during the examinations. Very often, the information to be stored is so huge that it cannot be held together within the limited memory space of the students. How often students feel a great sigh of relief when they release the load of information that is not useful to answer the questions on the examination papers. It is

the tension and the anxiety involved in the storage of information and above all the overriding importance given to the results of these examinations in shaping the life and career of young people, which are the root causes of malpractices and agitations for the postponement. If questions and items in any examination paper in any subject test very little of storage of information and go on to test more important intellectual abilities like comprehension, application, analysis, synthesis and judgment, then the tension and the anxiety can be removed from the scene. One of the ways in which the students react to the tension and the anxiety associated with these examinations is to cry for postponement of examinations. It is now possible with a little bit of ingenuity to face squarely this problem of postponement. While there are many alternatives, one of them is somewhat like this. The university examination board can announce a set of examinations once in March, another in April, yet another in May to be followed by one in June. This means four sets of 'equivalent papers' are to be set and kept ready. The university can offer the choice to the students to take the whole or the part of either March, April, May or June. One may argue that it will increase the cost. But really ways can be found to cut down the cost to a minimum. For example, the question book of the objective type can be collected intact and reused at a later stage. Many universities are in the habit of getting their papersetters set three sets of question papers and the procedure outlined here will mean one more additional paper. Naturally a question bank can come in handy to set four equivalent papers all at one stroke. Yet this arrangement can pave the way to completely eradicate the agitational attitude of students over postponement of examinations. □

*Project Officer, AIU.

UGC Conference on implementation of policy frame on higher education

The University Grants Commission recently convened a conference of the Vice-Chancellors of southern and western zones in New Delhi to consider the implementation of the important suggestions made in its policy frame for development of higher education which was adopted earlier at the meeting of the Association of Indian Universities at Rajkot. The conference also considered the report of the three working groups appointed by the Commission on extension including optimal use of vacations, criteria for evaluation of colleges and regulation of admissions and facilities to be provided to enable the weaker sections of society to take advantage of higher education.

Dr P. C. Chunder, Union Education Minister while addressing

leges and he felt that the further rate of growth could be absorbed by expansion of the existing colleges and institutes. Discussing the new approach to higher education he said that it had been decided to divide universities into three categories for the purpose of distributing funds and planning growth and expansion. Universities would henceforth fall into three categories—the developed universities, the developing universities and the underdeveloped universities. He said that of the 76 universities funded by the University Grants Commission roughly 20 per cent would fall in the last category i.e. under-developed universities and 60 per cent could be considered developing universities.

The idea was to stop giving special development funds to uni-

Prof Satish Chandra said that while higher education had been given 23 per cent of the total education budget in the fifth plan period, it had been given only 14 per cent in the sixth plan period. Even in absolute terms the net amount of money for higher education had decreased from Rs 292 crores to Rs 265 crores. 50 per cent of the existing arts, commerce and science colleges were not viable in terms of student enrolment and the Commission felt that national funds should not be wasted on starting new colleges and institutions but the existing colleges should be expanded. In those cases where there was pressure from backward areas for the opening of colleges, it would be more feasible to open hostels to be attached to existing colleges in nearby backward areas and give students from backward areas the facilities of these hostels. In addition the State Governments could arrange transport for students to nearby areas. In every district an attempt would be made to identify two colleges where special facilities would be created for students from weaker sections of society.

Prof Satish Chandra also felt that university vacations could be utilised by teachers for large scale extension work and that for every three days of work the teachers could be given one day's earned leave. He was optimistic of getting the idea accepted by the teaching community. He had a feeling that the entire vacation period which is generally of two and a half months could not be treated as a holiday. It has yet to be decided how this would be worked out and he felt that more teachers would also have to be appointed if the extension work is to be counted as part of the workload of teachers. The Commission has already set aside Rs. one crore to organise the extension work programmes in 1978-79.

Prof Chandra said that he would like to breakdown "the Chinese Wall between school and university education" and also envisaged university teachers going to schools to help raise standards there.

The Vice-Chancellors from northern and eastern regions are

CAMPUS NEWS

the conference said that while the government would respect the autonomy of universities it was also the duty of the academic community to respond to the needs of a particular situation in the country. He wanted the administrative causes of student unrest to be identified and removed and favoured a dialogue between the university authorities and students as well as teachers. He also felt that there was as much need for discipline among teachers as among students.

Prof Satish Chandra, Chairman of the University Grants Commission said that the rate of growth of higher education had fallen in the past few years. He said that therefore there was not that much pressure on universities and col-

leges in the first category and every year choose two to three universities from the other categories for intensive development. He said that the already developed universities in which standards could be compared to those in the developed world could get special assistance to create centres of advanced studies in particular departments and special funds for approved research programmes. The universities in the other two categories would continue to get funds for development.

The conference has suggested a moratorium for five years on opening of new universities and colleges. It is also expected that the national policy to be framed by the Central Government would also reiterate this decision.

expected to meet in New Delhi in the first week of July to discuss the approach paper on higher education.

Population education bureau to be set up

The national workshop on integration of population education in agricultural extension and rural development was held in Bangalore. The conference recommended the setting up of population education bureau at the Centre and the States.

The week-long workshop recommended that the bureau should be set up to promote integration of population education with rural development and agricultural extension programmes. They also would have to assume responsibility for research, monitoring and training in active collaboration with training centres and academic institutions.

The workshop was organised by the Union Ministry of Agriculture and Irrigation in collaboration with the Food and Agricultural Organisation, Family Planning Foundation of India, Government of Karnataka, and the University of Agricultural Sciences, Bangalore.

In this valedictory address, the Health Minister of Karnataka, Mr M. Mallapp, said that for bringing about a balance between the family size and the economic growth, population education should relate population trends with trends of socio-economic development and help in creating the desired small family norm. He underlined the value of co-operation from all development departments like agriculture and education for the health department to realise the goal of reducing the birth rate. Unchecked increases in population had created an imbalance between the increasing needs and the availability of food. He suggested that all the elected representatives of the people should be trained in population education so that they were fully equipped with necessary information on population dynamics.

The workshop considered the subject in three groups—conceptual framework on population

education, population education strategy and training methodology. It felt that population education should be regarded as an integral part of rural development and agricultural programme. Pilot projects on a regional basis should be formulated and launched and closely monitored to evolve an appropriate concept methodology and strategy for integration of population education with agricultural extension and rural development programmes. It recommended that rural development functionaries at grassroot level should not be involved in target-oriented family welfare programmes. Their job charts should include population education. In states where village and block level functionaries such as gram sevakas, mukhya sevikas were not functioning steps should be taken to create those posts. All the rural development functionaries from the village to the State level should be appropriately trained for this purpose. The workshop recommended the establishment of mobile training units for training village-level functionaries. It suggested that one full-time population education functionary should be assigned to each training centre.

Other recommendations include preparation of audio-visual aids and other learning resource materials, activation of voluntary organisations and setting up of an advisory committee consisting of representatives of the different ministries, non-official agencies and academic and training institutions. Dr D. Paul Chowdhary, Director, Department of Rural Development, Ministry of Agriculture and Irrigation was the workshop Director.

English to serve as link language

Mrs Renuka Barkataki, Union Minister of State for Education, made a strong plea for retaining English as a link language in the north-eastern region comprising five States and two union territories. She was addressing the staff and students of the Central Institute of English and Foreign Languages in Shillong. She said

that in this region which has a population of over 25 millions, only 6-7 millions speak Assamese while the other communities have no language at all but only dialects. The people prefer English as the medium of communication with each other. She suggested publication of three-language dictionaries—in the local dialect, Hindi and English—for the benefit of the people of the region. The Khasi tribals would profit by a dictionary in Khasi, Hindi and English and learn well the last two languages. English still occupied a dominant place in India and as long as English was being taught it should be taught well. However she regretted that this was not being reflected in the student community judging by a large percentage of failures in English at various examinations.

Mrs. Barkataki disclosed that the Union Government was planning to involve State Governments in conducting courses on the teaching of English.

Bhandarkar Institute celebrates diamond jubilee

The Bhandarkar Oriental Research Institute of Pune has conferred honorary membership on Prof. E. Waldschmidt of Göttingen in the Federal Republic of Germany, Prof. F.B.J. Kuiper of Leiden in Netherland, Prof. J. Filliozat of France, Prof. V.V. Mirashi of Nagpur and Prof. V. Raghavan of Madras.

Prof. Jan Gonda, internationally known indologist, while delivering his presidential address at the function opined against linking up understood rituals as dating from pre-historic rituals of some kind or other. He called upon scholars to suit the methods to the new circumstances keeping pace with developments in philology and allied branches of literary, social and religious learning. He however criticised the approach to sociological explanations of mythology and religious facts and figures when scholars tended to evaluate on the basis of a dogmatic and decisive significance with structure of the society as basis.

The Governor of Maharashtra, Mr Sadiq Ali, in his address said that the contemporary structures

of society and civilization culture and literature were all affected by indology and more generally orientology.

Dr R. N. Dandekar, General-Secretary of the Institute in his speech said that the U. G. C. had offered a subvention of Rs. five lakhs for the development of the Institute. The Maharashtra government had also sanctioned Rs 1.25 lakhs.

About 1200 delegates attended the 3-day convention which included 124 indologists from foreign countries.

ISM to organise short course on computer programming

Computer has become a part and parcel of the tool available to scientists, engineers, statisticians, geologists and executives in management and planning. To meet the complex nature of modern problems, it is necessary to take help of computers for quick results and decisions. Proper assistance from computer could however be sought in an effective way if the user is familiar with the computer programming. It is not necessary for every organisation to have a computer centre as to establish and maintain a computer centre is an expensive affair. If a person has a basic knowledge of computer programming he can construct a programme for his own problems and run it in a nearby computer centre.

Keeping this in view the Indian school of Mines, Dhanbad is planning to provide basic knowledge in Fortran IV Programming and software analysis as required by scientists, engineers and geologists, statisticians and executives in management and planning. The course is expected to give up-to-date information about the different numerical methods. It would also discuss the use of computer in mineral industry and to write programmes of different types case studies.

The course will cover, inter-alia the following topics :

- (i) Introduction to computer, functional parts of digital computer, types of computer and different types

of programming languages.

- (ii) Fortran constants, arithmetic statements, functions.
- (iii) Input output statements, format specifications subscripted variables.
- (iv) Control statements and transfer of control.
- (v) Looping and DO Loop.
- (vii) Sub-routine and sub-programme.
- (vii) Matric algebra, determination of eigen value and programming of matric operations.
- (viii) Solution of transcendental equation, programming of Newton-Raphson method of iteration.
- (ix) Solution to simultaneous equation by Gauss-seidal method, Gaus-iteration method, Crout's methods and programming thereof.
- (x) Interpolation, numerical differentiation, numerical integration, solution of differential equation by numerical methods and programming thereof.
- (xi) Method of Least Square and analysis of trend surfaces.
- (xii) Computer programming of statistical formulae and the solution.
- (xiii) Use of computer in Mineral Industry.

The faculty will include Prof. K.R. Nag, Prof. B.K. Mazumdar, Dr S. Dey and Shri R. Purushothaman—all from the ISM. In addition Dr S. Dasgupta of CMERI, Durgapur and Shri A. K. Sinha, of F (PxD) CI, Sindri would also be associated with the programme.

The programme will consist of lectures, tutorials, case studies, writing of programmes and visit to computer centre to run the programmes.

The course will be of two weeks duration starting from 10th July. Nominations along with the course fee should reach Prof. V.P. Singh, Professor of Continuing Education, Indian School of Mines, Dhanbad-826004 latest by June 24, 1978.

Moscow and PAU agricultural engineers to collaborate

The Moscow Institute of Agricultural Engineers and the College of Agricultural Engineering of Punjab Agricultural University, propose to collaborate with each other under the Protocol on Scientific and Technical Cooperation in the Field of Agriculture between the USSR and India in 1978-79.

Dr Y. Konkia, Vice-Chancellor of the Moscow Institute of Agricultural Engineers along with 3 faculty members visited the University and held meetings with Dr Amrik Singh Cheema, the Vice-Chancellor of the PAU, Dr B.S. Pathak, Dean of the College of Agricultural Engineering and Heads of the various Departments of the College of Agricultural Engineering. Both sides had expressed their desire to establish permanent contacts between these two institutions for training agricultural engineering personnel and regarding some particular problems on mechanization of agriculture. With certain modifications within the framework of the existing Protocol, the Vice-Chancellors of these two institutions have signed a Protocol suiting both the sides, which would be submitted to the Minister of Agriculture, USSR and Indian Council of Agricultural Research, New Delhi for their final approval.

Patna to re-introduce moderation system

Dr A. K. Dhan, Vice-Chancellor, Patna University announced that the system of moderation of question papers which had been abolished two years ago will be re-introduced. As per decision of the university all question papers would be moderated by a one-member moderation board to be appointed separately for each paper of different subjects.

The Patna University has taken this decision to re-introduce moderation of question papers to avoid frequent complaints by the examinees followed by walkouts from examination halls or agita-

tions on the plea that the questions were either out of syllabus or were stiff.

Governing bodies of colleges reconstituted in Bengal

Mr Sambhu Ghosh, Minister for Higher Education, West Bengal announced in Calcutta that the governing bodies of sponsored colleges and government colleges in the State would henceforth include the General-Secretary of the students union, one representative of the non-teaching staff, three teachers/nominees (in place of two previously), two educationists nominated by the government, a nominee of the university and a nominee of the Department of Public Instructions. The Principal of the college will be the ex-officio Secretary. The President will be nominated by the Government. This decision would affect 65 sponsored colleges and 15 government colleges in West Bengal.

Plea for teaching of cooperation in universities

Mr Mohan Dharia, Union Commerce Minister, while inaugurating the third meeting of the National Council for Cooperative Training emphasised the need for introducing cooperation as a subject in the university curriculum. He felt that the present system of education was not geared to accomplish the tasks relevant to the needs of the people. Mr Dharia said that viable cooperative movement could be developed only through adequate training of the personnel engaged in this movement. In this context he felt that the universities should play an effective role in training people in this field. The meeting among other things discussed the report of the expert group on teaching of cooperation in schools, colleges and universities and introduction of correspondence course in cooperation.

Steps for P.G. courses in Tamil medium

The Commission on the medium of instruction appointed by the

Syndicate of the Madras University has recommended some bonus marks in interview for Tamil medium students in the selection of candidates for Government jobs.

There was general agreement among the members of the Commission on the need to switch over to Tamil medium in the Postgraduate stage of education also in a phased manner. The Commission met in Coimbatore on May 19 and 20 under the chairmanship of Mr. G.R. Damodaran. It suggested the introduction of Tamil medium in the post-graduate stage in Economics and Mathematics from the academic year 1979-80, (already in History, Tamil medium has been introduced at the M.A. level).

Mr. C.K. Kumaraswamy, Registrar of the university said that almost all the subjects in the undergraduate courses except Commerce had provision for Tamil medium. In Commerce also Tamil medium should be made available from 1979-80. The Commission has also favoured bilingual teaching in order to make Tamil medium more effective. The Tamil Nadu Textbook Society has undertaken the production of books for the courses in which Tamil medium is to be introduced at the post-graduate level. Better remuneration and incentives are to be provided for the authors who write text books in Tamil and some kind of royalty has been suggested instead of a lump sum amount as at present.

Another recommendation of the Commission is that international terminology may be freely adopted through transliteration until standardisation of terminology is achieved. The suggestion that for Tamil medium sections in private colleges no minimum strength need be prescribed for purposes of grant has also been made.

The Tamil Nadu Textbook Society has already produced 830 books for undergraduate and post-graduate courses in Tamil medium and it has offered to give a discount of 50 per cent to colleges which purchase the books. The Commission has made the suggestion that the colleges should

make use of this offer of medium of instruction.

The Commission has decided to set up a cell to look after the follow up work on its recommendations. Mr Kumaraswamy pointed out that the P.S.G. College of Technology had already prepared a dictionary of scientific words with their Tamil equivalents. This was compiled subject-wise initially but made into alphabetical order subsequently. The Commission consisted of 12 members. All the recommendations of the Commission will be placed before the Syndicate.

National youth board to be revived

The Ministry of Education is planning to revive the National Youth Board and formulate a national youth policy to canalise youth power for national development and social change. The National Youth Board was set up in 1970 to provide necessary coordination between various agencies engaged in administering different youth programmes. But this Board had only one meeting and never met after its first sitting. The membership of non-officials on the Board has lapsed automatically after three years and the Board became defunct. Even though the Board meeting was not held, there had been a substantial expansion in the national youth programmes particularly the national service scheme and Nehru yuvak kendras.

One of the functions of the proposed Board will be to arrange for a comprehensive survey to obtain reliable data regarding the number of youth, their education and training levels, their attitudes and habits, the job-opportunities available for them and the functioning of youth organisations. This is expected to help the Government evolve a national strategy for the whole country. Considerable importance is attached to this subject because 66 per cent of the population is below the age of 30 and 59 per cent below the age of 25. It has been noted by the Estimates Committee that there is lack of proper rapport between the society and youth population and it has stres-

sed the need to open channels of communication with youth in order to dissuade them from resorting to unruly demonstrations.

Biomedical engineering degree in Osmania University

Osmania University is proposing to introduce a full-fledged five-year professional degree course in biomedical engineering during the Sixth Plan period. Prof Alladi Prabhakar, Principal, University College of Engineering said that this would be the first course of its kind in the country. He said that the Department of Electronics and Communication envisaged expansion or research facilities in biomedical engineering in the next decade. There would be dire need for professional biomedical engineers in India in the late eighties and the initiation of professional degree course should be done by 1980. The student is expected to spend three years out of five years in the engineering faculty and two years in the medical faculty. He will be attached to a general hospital during the sixth year.

Prof Prabhakar said that the biomedical engineering was the application of engineering concepts and principles to the study of biological phenomena. It involved the development of instruments and devices for diagnostic and therapeutic use. It also provides for the optimum use of costly medical equipment. Biomedical engineering was an inter-disciplinary field in which engineering concepts could be applied directly for the alleviation of human sufferings.

Nehru Fellowships

The Jawaharlal Nehru Memorial Fund announced the award of fellowships to Dr A.P. Mitra, Deputy Director of the National Physical Laboratory and Mr K.K. Nair, a noted author who writes under the pen name "Krishna Chaitanya".

Dr Mitra is a distinguished scientist working actively in the field of ionospheric studies and radio propagation. The theme of his two-year fellowship will be

"The changing atmosphere: Future trends and options for India".

Mr Nair has written several books on humanities and sciences, his most significant project being a history of world literature in several volumes.

The theme of Mr Nair's fellowship will be "Freedom and transcendence". It will be the final volume of a five volume series on the philosophy of freedom.

PAU research centre at Bhatinda

Punjab Agricultural University will establish a well equipped cotton and horticulture development and research centre at Bhatinda at an estimated cost of Rs 3 crores. The Indian Council of Agricultural Research has already given its consent and the World Bank is also expected to finance the project.

The Vice-Chancellor, Dr Amrik Singh Cheema said that 100 acres of land had already been acquired for the proposed mini PAU campus. Another important project on the anvil was a Rs 30 lakhs home science complex at Kauni village near Muktsar.

Democratisation of varsity

The decision-making in the university affairs should percolate from the lower categories like teachers and students to bring about democratisation in the functioning of the university. This was stated by Dr. G. Ram Reddy, Vice-Chancellor of Osmania University while inaugurating the seminar on Democratisation of the University Act organised by the Osmania University Teachers' Association at Hyderabad. He said that democratisation meant giving opportunities to the people working in the university to participate in any decision making bodies. He stressed the need for providing such opportunities by amending the Act. Democratisation meant not total independence but functional democratisation.

Prof. Reddy said that democratisation or autonomy meant freedom for operating university

affairs without interference and it should be functional. Giving his concept of autonomy, the Vice-Chancellor said that the university should have freedom to operate and freedom to take decisions. By changing the Act we were ensuring greater autonomy and democracy for the university but many things could be done within the framework of the democratic set up.

UGC scheme for private students

The University Grants Commission has decided to set up a committee to consider the question of allowing students to appear privately in university examinations.

The Commission wants to put the system on a rational basis. At present about 75 universities are offering facilities to private candidates to sit for examinations in various courses. Eighteen universities also offer correspondence courses.

The commission is of the view that facilities to private candidates might be provided on a selective basis and limited to a few universities in each region.

University of medical sciences

The Uttar Pradesh Government is planning to open a university of medical sciences having four independent faculties of allopathic, homoeopathic, ayurvedic and unani systems of medicine.

The State Health Minister, Mr Kalyan Singh said that this would be the only university of its kind in the country.

New teaching methods for adults needed

The Prime Minister, Mr Morarji Desai, while addressing an adult education convention at Ahmedabad said that novel teaching methods should be devised in order to generate interest in prospective students and simple literature which would sustain interest after people have learnt to read should be made available. He suggested that voluntary agencies taking up adult education programmes

should pay more attention to women who formed a majority of the unlettered populace. Although the percentage of literacy, the Prime Minister pointed out, had increased from 10 to 25 in three decades but the results were not satisfying mainly because enough attention had not been paid to devising suitable teaching methods.

Activisation of adult education programme

The Vice-Chancellor of University of Bombay, Prof. Ram Joshi, said that the problem of adult education needs to be tackled effectively. He was inaugurating the three-day workshop on adult education and the national service scheme at the Tata Institute of Social Sciences. He regretted that the majority of the adult education programmes in the country have so far failed as they have been treated as some sort of a welfare activity. Prof. Joshi said that there must be a proper evaluation of adult education programme.

Prof. L. R. Shah, Programme Adviser (NSS) in the Ministry of Education said that the Centre had set up a target of educating ten crores people during the next five years.

BSc course in Dairy Technology

To meet the requirements of technical personnel for dairy development programme the Haryana Agricultural University is starting a BSc course in Dairy Technology from the next academic session. The programme is being instituted in accordance with the recommendation of the National Commission on Agriculture.

UGC approves of autonomy for three T. Nadu colleges

The University Grants Commission has agreed to give its concurrence to the proposal of the Madras University to confer autonomous status to the St. Joseph's College, Tiruchi, the Regional Engineering College, Tiruchi, and Avinashilingam Home Science College, Coimbatore.

The UGC will provide 100 per cent assistance to these colleges for the purpose of strengthening the faculty and academic programme, besides giving the required administrative support to function as autonomous institutions. The UGC assistance will be available for five years to begin with.

The UGC has also agreed to give Rs 10 lakhs to the Madurai University to acquire an electron microscope for the Department of Biological Sciences.

Modernisation of law study urged

The Chief Justice of Andhra Pradesh, while inaugurating the summer institute for teachers in law of southern universities at Sri Venkateswara University said that legal education had been in static over long decades resulting in stagnation.

The conference which was the first of its kind, would certainly pave way for modernisation of law education in our country. He said now constitutional law, its teaching and its understanding had become very important, and should naturally constitute substantial portion of law teaching. He was happy to mention that duration of law course had been increased from two to three years. Speaking about law colleges, the Chief Justice expressed that they were ideal centres for legal research, where spirit of adventure in ideas and research could be achieved. He wanted that research must be made compulsory as part of legal study. Chief Justice emphasised that however unpalatable it might appear to several persons connected to law profession that many were not upto mark in their language. Their expression both in writing and speaking is inadequate. He suggested that all law institutions must be attached with good libraries where all law journals should be supplied including books on language.

He was of the opinion that law students should be trained in public speaking by arranging weekly debates. He said that unless law students had participated in certain number of debates and moot

courts they should not be allowed to pass. Chief Justice expressed his gratitude to university and UGC for having sponsored this summer institute which would extend benefit to law teachers of southern universities.

Mr K. Murthy, Vice-Chancellor of Sri Venkateswara University presided over the function.

Personal

1. Dr. R. V. Ramakrishna has taken over as Vice-Chancellor of Jawaharlal Nehru Krishi Vishwavidyalaya, Jabalpur, w.e.f. 1st June, 1978.
2. Dr. B.A. Chaugule has been appointed Vice-Chancellor of Punjabrao Krishi Vidya-peeth, Akola, for a term of five years.
3. Dr. Deep Chand Sharma has been appointed Vice-Chancellor of Meerut University for a term of three years.
4. Dr. G. Rangaswami, Vice-Chancellor, Tamil Nadu Agricultural University has been appointed Director of Central Staff College for Agriculture, Hyderabad.
5. Dr. C.R. Mitra, Director, Birla Institute of Technology & Science, has been invited to attend the World Conference on Innovative Higher Education being held at Wisconsin (USA).
6. Prof. V. S. Ramadas, Head of the Department of Botany and Vice-Principal, Sri Venkateswara College, Tirupati, has been selected by the UGC as National Lecturer, under the national lectures programme of 1978-79.
7. Shri J.P. Naik, eminent educationist, has been appointed Visiting Professor of Jammu University.
8. Dr. G.D. Sharma Research officer, Association of Indian Universities, has been invited to attend a Seminar on National Development and World Peace through Higher Edn. being organised by the International Association of University Presidents at Tehran from 22-27 June, 1978.

Fifth Administrative Development Programme to be held at Chandigarh

The Fifth Administrative Development Programme has been planned by the Seminar of Registrars and Administrative Officers in collaboration with the Department of Commerce and Business Management of the Panjab University at Chandigarh from 21st to 31st August this year. The role of universities and the All-India Institute of Science, Technology and Management in the national economy is of prime importance. They attract some of the more talented students, scholars and research workers. It is necessary that the Administration must appreciate their goals and aspirations and provide the necessary infrastructure and services to the academics so that they may flourish in a free and flexible environment.

As colleges and universities and the special institutions for higher education/research established in recent years have grown both in size and expenditure, their organisational structure has become more formalised with widening involvement with the Government and the community, with accountability to groups both within and outside higher education and research. The problems of administering budgets, programmes, personnel and resources are becoming complicated for the conventional resourcefulness of administrators whose skills have been developed largely on the job. A high level of sensitivity and understanding is necessary for the handling of the day-to-day problems of the academic community in educational and research institutions. A new orientation in thinking and practices is necessary to promote the culture whereby creative people can function with freedom for the advancement of knowledge. The administration plays an important role in moulding the relationship of the academic staff and evolving a proper blend of conformity and creativity so necessary for the effective functioning of colleges, universities and institutes of higher education/research and for the

achievement of their overall goals and objectives. The resolution of many problems in institutions of higher education requires a high degree of administrative skill and a deep understanding of the problems of the academic community and of the young students who are the builders of the nation.

The Administrative Development Programme planned at Chandigarh is especially designed to provide:

- i) Required information and knowledge of the basic concepts and principles of management and modern management techniques in fields relevant to their work.
- ii) Specific functional skills is needed for effective institutional administration, particularly in their respective spheres of work.
- iii) New awareness and new attitudes on the part of the middle level personnel towards understanding of the central aims/purposes of the institutions with which they are associated towards enlarging their competence and improving their educational contribution.

The programme is broadly divided into two parts :

Part I : Relevant Indian Case Studies/Group Discussion/Workshop Sessions.

Part II : Talks followed by discussions.

The programme content would cover the following four major areas:

- i) Specific problems in Administration, relevant to their fields of work, centralisation and decentralisation of authority delegation, Planning and Control tools of work, Planning Programming and Budgeting, Recruitment, Selection Development and Evaluation of administrative and academic staff, Hierarchy, Communication, Decision making process in the Institute / University, Stores, Purchase Procedures

including Inventory Control, Supporting Service to Faculty/Scientists, Organisation of student activities, extracurricular and welfare.

- ii) Problems of relationship amongst different staff functionaries between section and departments and their relationship across boundaries inter-face problems with Faculty/ Scientist, Students, Staff other Groups and the Public).
- iii) New knowledge, techniques and skills necessary to deal with specific problems connected with administration, e.g. Techniques Planning, Budgeting, Stores and Inventory Control, New work techniques for Planning and Control of new and operating projects, PERT, CPM, Techniques of MIS Design, Principles of Personnel Management, Staff Associations and Grievances Handling.
- iv) Techniques of Behavioural Science to deal with problems of change in organisation and environment and the skills necessary to adapt themselves to changing problems and changing environments.

The programme is specially designed for Deputy/Assistant Registrars and other equivalent level officers in universities and in institutions of higher education; ii) Administrative Officers and Deputy/Assistant Administrative Officers of Research Labs located in the northern region. They should have a minimum of 3-5 years experience and should preferably be in the age group of 25 to 40.

The Programme Faculty will consist of Members of Faculty/Registrars from the following participating institutions: ASCI, Hyderabad; Department of Commerce & Business Management, Panjab University; IISc, Bangalore; IIM, Calcutta; IIT, Madras, TIFR, Bombay; and BITS, Pilani. Further details can be had from Mr M.K. Subramaniam, Programme Coordinator (ADP), Administrative Staff College of India, Bella Vista, Hyderabad-500475.

A list of Doctoral Theses Accepted by Indian Universities

Mathematics

1. Mrithyumjaya Rao, K. Large elastic deformations. Kakatiya University.
2. Patadia, Jamanadas Ratilal. A study of the absolute convergence of lacunary fourier series. M.S. University of Baroda.
3. Sarkar, Biswanath. Study of production and inventory system: A control theory approach. University of Calcutta.
4. Saxena, Pramod Kumar. Radical theory of near rings. I.I.T., Kanpur.

Physics

1. Atowar, Rahman. Electronic transport phenomena in thin solid films. Gauhati University.
2. Chaudhury, Chandrashekhar Prasad. A study of the world morphology of the F2 region anomalies. University of Calcutta.
3. Chougule, Baburao Kallappa. X-ray spectroscopic study of some zirconium compounds. Shivaji University.
4. Dagar, Rati Rani. Some studies of ionospheric sporadic E layer. University of Delhi.
5. Goswami, Prabirkanta. Some studies on the microwave properties of normal and controlled IMPATT devices. University of Calcutta.
6. Lumb, Hari Mittar. F region model studies. University of Delhi.
7. Mandal, Pushpajit. Studies on positron atom collision. University of Calcutta.
8. Mishra, P.K. Nuclear magnetic resonance studies of molecular motions in liquids. I.I.T., Kanpur.
9. Mishra, Santosh Kumar. A phenomenological approach towards the lattice dynamics of f.c.c. metals. Kanpur University.
10. Nagpal, Ashok Kumar. On the study of interacting high-spin field theories. University of Delhi.
11. Narinder Nath. Some studies of the D-region of the ionosphere. University of Delhi.
12. Neogi, Kashinath. Some aspects of weak interactions. Visva-Bharati.
13. Rajendra Kumar. A study of the structural and optical properties of thin films of metals, dielectrics and semiconductors. University of Delhi.
14. Rakshit, Phatikchandra. Studies on Gumoscillators with resonant loads. University of Calcutta.
15. Risal Singh. Studies on photoelectron flux and thermal structure in the equatorial topside ionosphere. University of Delhi.
16. Samanta, Himadri Kumar. Repair of radiation induced damages in thymine starved escherichia coli. University of Calcutta.
17. Sen, Pradip Kumar. Some problems of heat conduction in composite media and the effects of contact resistance on the temperature distributions. University of Burdwan.
18. Shiva Prasad. Magneto-microwave kerr effect in ferrites and P-germanium and D.C. conductivity of doped ferrites. University of Delhi.
19. Shivkumar, G.K. Nucleation, growth, structure and orientation of semi metal films. Sardar Patel University.

Chemistry

1. Agarwal, Shyam Sunder. Syntheses of substituted iminodiacetic acids and study of their properties. Kanpur University.
2. Agrawal, Shree Kumari. Studies on the analytical chemistry of vanadium, niobium and tantalum. Ravishankar University.
3. Arora, Amarjit. Combustion studies on the solid rocket propellants: Phenol-formaldehyde composite systems. University of Kashmir.
4. Bandyopadhyay, Madhusudan. Studies on polymerization and polymer modification. University of Calcutta.
5. Bhawal, Baburao Manikrao. Studies in the chemistry benzoisoxazoles. Marathwada University.

6. Chadha, Ramesh Chander. Investigations on the analytical potentialities of 2-(2-lepidylazo)-1-naphthol-4-ammonium sulphonate (Lanas). University of Delhi.
7. Chaturvedi, Ajit Kumar. Elucidation of structure of polysaccharides present in mucilage of salvia agyptica. Kanpur University.
8. Gadre, S.R. Electron momentum distributions and Compton profiles of atoms and molecules. I.I.T., Kanpur.
9. Guha, Bikas Ranjan. Studies on organic corrosion inhibitors. University of Burdwan.
10. Gupta, Debasish. Studies on charge transfer in electronically excited states. University of Calcutta.
11. Jagadale, Usha Dattajirao. Analytical applications of 6-nitro quinoxaline-2, 2 dithiol. Shivaji University.
12. Jagannadhan, V. Oxidations with vanadium (V): A kinetic and mechanistic study. University of Madras.
13. Kund, Duhshasan. Thermal decomposition studies of irradiated crystalline barium perchlorate. Utkal University.
14. Makrandi, Jagdish Kumar. Synthetic studies in benzopyranone and benzofuranone derivatives. University of Delhi.
15. Mittal, Shital Prasad. Photolysis and radiolysis of the nitroprusside ion in aqueous solution. University of Delhi.
16. Natarajan, N.M. Structure and mechanistic studies in oxidations and chlorinations with chloramine-T. University of Madras.
17. Nimbalkar, Abasaheb Yashavantrao. Mechanism of hydrolysis of some hydroxides. Shivaji University.
18. Pandey, Prakash Chander. Studies on ions and ions pairs in charge transfer complexes of iodine with group VA donor species. Kanpur University.
19. Parnandiwari, Jyotsna Madhusudan. Organic chemistry of nitrogen and sulphur: Synthetic applications of carbonyl sulphide. Nagpur University.
20. Puri, Renu Bala. Chemical and bio-chemical studies on the regulation of insulin information. Kanpur University.
21. Saxena, Swarup Das. Kinetics and mechanism of the electron transfer reactions of amides and thallium (III). Kanpur University.
22. Seth, Jagat Narayan. Pyrazinamide pyrazine-dicarboxamide and aminopyrimidine complexes of metal halides and pseudohalides. Avadh University.
23. Sharma, Subhash Babu. Synthesis and structural studies of bimetallic hexathiocyanates and tetraselenocyanates and their complexes with certain Lewis bases. Avadh University.
24. Shrikrishna Singh. Studies on microbiological and chemical aspects of antibiotics. University of Calcutta.
25. Shrivastava, Harish Chander. Studies on the structure of polysaccharides occurring in seeds of Cassia grandis L.f. Kanpur University.
26. Siva Prasad, J. A study of selected phenolic compounds and contributions to the chemistry of some coniferales. University of Delhi.
27. Verma, Vijay. Studies on the metabolism and chemical and biochemical action of the tranquilized drug, Centazalone. Kanpur University.

Earth Sciences

1. Basu, S. Statistical analysis of seismic data and seismic risk analysis of Indian Peninsula. I.I.T., Kanpur.
2. Madhusudhana Rao, A. Some studies on point discharge currents in relation to meteorological factors. Andhra University.
3. Mitra, Arupkumar. Structural analysis and metamorphism of an area south west of Pisangan, District Ajmer, Rajasthan. University of Calcutta.
4. Srinivas, G. Structure and petrology of the champion gneiss of the Kolar schist belt. Bangalore University.

Engineering and Technology

1. Bhargava, D.S. Water quality in three typical rivers in U.P.—Ganga, Yamuna and Kali. I.I.T., Kanpur.

2. Jain, A.K. Experimental and analytical investigations on class of dynamic problems in beam foundation interaction. I.I.T., Kanpur.
3. Jindal, Uday Chand. Stress distribution around ring insertions in a plate under uniaxial and biaxial loadings. University of Delhi.
4. Krishna Reddy, B.G. Analysis of machine tool structures using experimental flexibility method and shear centre. Kakatiya University.
5. Kundu, Kisorimohan. Study of Bluff-body flame stabilisation. University of Calcutta.
6. Shanmugham, M. Analysis and optimal design of plane frames with nonprismatic members. University of Madras.
7. Sinha, Rathindranath. Studies on the kinetics of dehydrogenation of isopropanol over zinc oxide catalysts. Andhra University.
8. Venkataraman, T.S. Evaluation of fillers based on the rheological response of the sheet asphalt mixtures. University of Madras.
9. Waikar, Prakash Shankarrao. Investigations into the analysis of trailer chassis. Nagpur University.

BIOLOGICAL SCIENCES

Biochemistry

1. Bandyopadhyay, Anuradha. Studies on the action of neuropharmacological agents. University of Calcutta.
2. Leelamma, S. Role of protein in metabolism of glycosaminoglycans in relation to an atherosclerosis. University of Kerala.
3. Sarin, Neera Bhalla. Studies on isolation and fusion of protoplasts. Jawaharlal Nehru University.

Botany

1. Alice, C.J. Cytogenetical studies on the aneuploids of *pennisetum typhoides*, pearl millet. University of Kerala.
2. Balakrishnan, R. Molecular basis of sporulation in *bacillus*: Studies on the nature of antibiotic synthesising complex in *bacillus polymyxa*. Madurai University.
3. Chandrasekaran, K. Mitochondriogenesis in yeast. Madurai University.
4. Chattopadhyay, Madhuchhanda. Studies on the resistance of rice plants to brown spot disease caused by *helminthosporium oryzae* breda de haan. University of Calcutta.
5. Guru, Bhikari Charan. Taxonomy and ecology of testacea (Rhizopoda) in tropical soils from Western Orissa. Sambalpur University.
6. Khare, Lalji. Ecophysiological and control studies of two weeds of cultivated fields. Vikram University.
7. Khurana, Chander Kanta. Biosynthesis and function of the pigment of *blepharisma intermedium* (Indian species). Jawaharlal Nehru University.
8. Pal, Silpi. Comparative morphology and taxonomic implications of foliar saterids of a few taxa of angiosperms. University of Calcutta.
9. Palit, Pratip Kumar. Varietal and seasonal difference in photosynthesis and productivity of rice. University of Calcutta.
10. Pratap Reddy, N. Breeding systems in Indian heterostylous plants. Kakatiya University.
11. Sharma, Rameshwar Prasad. Phytochrome regulation of peroxidase activity in *zea mays*. Jawaharlal Nehru University.

Zoology

1. Arora, Mohan Prakash. Seasonal cytological and histochemical changes in the endocrine glands of *calotes versicolor* (Daud). Vikram University.
2. Chandrashekar Reddy, C. Biochemical and physiological studies on the effects of pesticides on honey bee, *apis cerana indica*. Bangalore University.
3. Kawatra, Vinod Kumar. Studies on the effect of tepa on certain physiological processes associated with reproduction in the female tropical house mosquito, *culex pipiens fatigans* wiedemann. University of Delhi.
4. Khattar, Promila. Certain factors determining visual and olfactory orientation of the larvae of *papilio demoleus linnaeus* (Lepidoptera: Papilionidae) University of Delhi.
5. Mandal, Prasantakumar. Aphids of Sikkim. University of Calcutta.

6. Pawar, Bhimrao Kondiba. Lipids in reproductive organs of some vertebrate seasonal breeders. Shivaji University.
7. Ramasubramaniam, Kalyani. Studies on egg envelopes of molluscs with reference to a terrestrial pulmonate *achatina fulica*. University of Madras.
8. Ranade, Anil Madhav. Studies on the green mussel, *mytilus viridis* L. Shivaji University.
9. Ravindranath, Krothapalli. Studies on the shrimp and prawn fauna of the lower reaches of river Krishna and adjoining coastal waters of the east coast of India. Andhra University.
10. Shrivastava, Raj Bahadur Lal. Innervation of the heart and blood vessels in certain Indian birds. Kanpur University.
11. Venu Rao. Studies on tetraphyllid, trypanorhynchid and lecanicephalid cestodes of Andhra Coast fishes. Andhra University.

Medical Sciences

1. Balraj, Man Mohan. Immunologic and biologic characterization of some isolate of *toxoplasma gondi* in India. Postgraduate Institute of Medical Education and Research, Chandigarh.
2. Mukhopadhyay, Bishnuprasad. Studies on the pharmacology of aggressive behaviour with special reference to lithium. University of Calcutta.
3. Rajkumar, K. A pharmacological study of the factors regulating ovum transport. Postgraduate Institute of Medical Education and Research, Chandigarh.
4. Ramanna, Bandi Chinna. A study of cell mediated immunity in rabies virus infection. Postgraduate Institute of Medical Education and Research, Chandigarh.
5. Sengupta, Kasturi. Studies on the effects of hydrazine or phenyl hydrazine on certain aspects of ascorbic acid metabolism. University of Calcutta.
6. Sikka, Suresh Chandra. An in vitro study on production of enzymes and hormones by human placenta. Postgraduate Institute of Medical Education and Research, Chandigarh.
7. Sinha, Madhur Kumar. Receptor saturation and testosterone production by prepubertal, pubertal and postpubertal rate testes in vitro. Postgraduate Institute of Medical Education and Research, Chandigarh.

Agriculture

1. Balbir Singh. Studies on the nitrogen and potash fertilization of peach in relation to growth, yield and quality. Kanpur University.
2. Borah, Benudhar. Studies on the biology, behaviour and susceptibility of residual population of *tribolium castaneum* herbst and *trogoderma granarium* evarts exposed to pesticides in warehouses. Punjab Agricultural University.
3. Chaturvedi, Subhash Chander. Studies on salt tolerance in grapes, *vitis vinifera* L. Kanpur University.
4. Dakha, Ranvir Singh. Agronomic studies on sunflower. Kanpur University.
5. Dwivedi, Ramesh Prasad. Studies on *thanatephorus* sp. attacking cow pea, *vigna catjang* walp plants. Kanpur University.
6. Ghanshyam Narain Singh. Fractional diallel analysis of some quantitative character in lady's finger, *abelmoschus esculentus* (L) moench. Kanpur University.
7. Gupta, Ram Pal. Studies on virus diseases of ornamental plants and their control. Kanpur University.
8. Kundan Singh. Line x tester analysis in urd, *phaseolus mungo* L. Kanpur University.
9. Mani Ram. Biology and parasitism of *rhizoetonia* sp. associated with gram, *cicer arietinum* L. root. Kanpur University.
10. Mathura Ram. Nutritional studies on tuberose, *polianthes tuberose* Linn with reference to vegetative growth, yield quality and essential oil content. Kanpur University.
11. Motiwaley, Manohar P. Effects of nitrogen levels and moisture regimes on the yields and quality of sugarbeet, *beta vulgaris* L. Kanpur University.
12. Ram Kishan Singh. Interrelationship between iron and manganese in soils and plants. Kanpur University.
13. Sachi, Dyanand. Iron solubility, reaction kinetics of

iron chelates and their diffusion in calcareous soils. Punjab Agricultural University.

14. Sachidananda Singh. Biometrical investigations in green gram, *Phaseolus aureus* Roxb. Kanpur University.

15. Shiv Shanker Singh. Manurial studies in arhar (Prabhat) wheat (Moti) rotation. Kanpur University.

16. Vishwa Nath. Studies on the binomics, morphology and control of *Hototrichia consanguinea* Blanch. Kanpur University.

17. Yadav, Ajab Singh. Nutritional studies in sun flower, *Helianthus annuus* L. Kanpur University.

18. Yantri Prasad. Studies on fungi associated with root rot of safflower. Kanpur University.

Veterinary Science

1. Sarker, Abdul Baten. Influence of frequency of milking on the production and temperamental behaviour of murrah buffaloes. Punjab Agricultural University.

Additions to AIU Library

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09 *Economics*. 421p.
10 *Commerce*. 466p.

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1. CSE grades: In search of operational definitions.
2. CSE weighting study.

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Hancock, Alan. *Planning for educational mass media*, Essex, Longman (c 1977), 383p.

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Pt. 1. Building and construction. 227p.
Pt. 2. Environmental planning. 390p.
Pt. 3. Roads and transport. 416p.
Pt. 4. Environmental pollution. 255p.

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INDIAN INSTITUTE OF TECHNOLOGY, KHARAGPUR

Advertisement No. R/12/78

Applications are invited for the under-mentioned posts at the Indian Institute of Technology, Kharagpur, West Bengal:

POSTS

PROFESSOR

Scale of Pay : Rs 1500-60-1800-100-2000-125/2-2500/- plus D.A. as admissible.

Age: Preferably below 50 years.

Qualifications

Essential : (i) A good academic record with a Bachelor's or Master's degree in the appropriate branch and a Doctorate degree (ii) Twelve years experience in the field of specialisation prescribed, of which at least 5 years should be in teaching and/or research. (iii) Published research work of good quality in journals of repute. (iv) Experience in guiding research.

Desirable: (i) Experience of teaching post-graduate classes. (ii) Good design and/or industrial experience.

Vacancies & Specialisation

(i) **Aeronautical Engineering** (One post)

In the general field of Aircraft Design.

(ii) **Chemical Engineering** (One post)

Chemical equipment design & transfer operation.

(iii) **Civil Engineering** (One post)

Specialization in any one of the following fields—Structural Engineering/Soil Mechanics and Foundation Engineering/Public Health Engineering/Hydraulic Engineering.

(iv) **Computer Centre** (One post)

Specialised knowledge in system hardware/system software/application software.

(v) **Cryogenics Engg.** (One post)

Planning Research programme in Cryogenic Systems and developing and organising Cryogenic Engineering Laboratories.

(vi) **Electronics & Electrical Communication Engineering** (Two Posts)

Knowledge in Computer Technology.

(vii) **Humanities** (One post)

Specialisation in any of the following

In the field of psychology

Knowledge of industrial/educational psychology.

In the field of English

Familiarity with laboratory methods of teaching English, designing teaching materials etc.

(viii) **Mathematics** (Two posts)

Specialisation in any of the following fields—Integral equations, Functional analysis, Summability, Numerical analysis, stochastic process and Operations Research, Fluid Mechanics and Energy.

(ix) **Mining Engineering** (One post)

Mine planning and management.

(x) **Radar & Communication Centre** (Three posts)

Specialisation in any of the following fields—Knowledge in the field of microwave antennas/phased array antennas.

(xi) **Rural Development & Social Services** 'One post'

Educational qualification may be in any branch of Engineering/Technology/Architecture & Regional Planning/Science or Social Sciences.

Experience in rural studies, rural development and/or Social welfare activities, organising NCC/NSS/PT programmes for students; in field camp management.

(xii) **Naval Architecture** (One post)

Specialisation in any of the following fields—Ship Design/Shipbuilding Technology/Ship Statics/Ship Structures/Ship Hydromechanics/Ocean Engineering.

II. ASSISTANT PROFESSOR

Scale of Pay: Rs 1200-50-1300-60-1900/- plus D.A. as admissible.

Age : Preferably between 30 and 45 years.

Qualifications

Essential : (i) A good academic record with a Bachelor's degree in the appropriate branch and a Doctorate degree. (ii) Seven years experience in the field of specialisation prescribed of which at least 2 years should be in teaching and/or research.

Desirable : (i) Published research work of good standard.

(ii) Experience in guiding research.

Vacancies & Specialisation

(i) **Chemical Engineering** (One post)

Specialisation in one of the following area:—Combustion Engg. and High Temperature Processes, Biochemical Engineering, Petroleum Processing, Transfer Operation.

(ii) **Civil Engineering** (Two posts)

Specialisation in any of the following fields—Structural Engineering/Highway Engineering/Public Health Engg.

(iii) **Computer Centre** (One post)

Specialised knowledge in system hardware/system software/ application software.

(iv) **Cryogenics Engg.** (Four posts)

Specialisation in any of the following fields—Design of Cryogenic systems/low temperature Physics/Plant design for heat and mass transfer in an Institute of University standard.

(v) **Electronics & Electrical Communication** (Engg) (Three post)

Specialisation in any of the following fields—Microelectronics, Industrial electronics & Control Engg., Computer Engg., Communication Systems.

(vi) **Mathematics** (One post)

Lie Algebra, Geometry and modern Algebra, Functional Analysis, Numerical Analysis, Electricity, Computational Fluid Mechanics, Biomechanics and Relativity, Geometry of forms.

(vii) **Mining Engineering** (Two posts)

Mine Planning and Management.
(viii) **Metallurgical Engineering** (One post)

Physical Metallurgy or Ferrous Extractive Metallurgy.

(ix) **Radar & Communication Centre** (Two posts)

Specialised knowledge in Phased Array/Microwave Antennas/Electromagnetic Scattering.

(x) **Naval Architecture** (One post)

Specialised knowledge in any of the following fields—Ship Design/Shipbuilding Technology/Ship Statics/Ship Hydromechanics/Ocean Engineering.

III. LECTURER

Scale of Pay : Rs 700-40-1100-50-1600/- plus D.A. as admissible.

Age : Preferably between 25 and 38 years.

Qualifications

Essential : (i) A good academic record with a Master's degree in the appropriate branch. (ii) Two years professional experience.

Desirable : A Doctorate degree.

Vacancies & fields

Aeronautical Engineering (One post)
Experimental Aerodynamics.

(ii) **Computer Centre** (Two posts)

Specialised knowledge in Computer Science & Technology.

(iii) **Cryogenics Engg.** (One post)

Specialised knowledge in any of the following fields—Research/industrial experience in Heat and Mass Transfer Cryogenic Engineering/Low Temperature Physics.

(iv) **Radar & Communication Centre** (One post)

Specialised knowledge in any one of the following—Microwave Antennas/Phased Array Antennas/Radar Systems.

(v) **Naval Architecture** (One post)

Ship Design/Shipbuilding Technology/Ship Statics/Ship Hydromechanics/Ocean Engineering.

Note : In the case of Professors, Assistant Professors, and Lecturers.

(i) Experience means experience gained after obtaining the Master's degree.

(ii) For the Architecture, Industrial Management, Mining Engineering and Naval Architecture Departments, if suitable candidates with prescribed essential qualifications are not available then the minimum educational requirements may be relaxed.

(iii) Relaxation of the minimum educational requirements may also be done in the case of candidates having outstanding research achievements or long and meritorious industrial/design experience.

IV. SENIOR SCIENTIFIC ASSISTANT (DEPTT. OF PHYSICS)

(Two posts)

Scale of Pay : Rs 550-25-750-EB-30-900/- plus D.A. as admissible.

Qualifications

Essential : M.Sc degree in Physics or

equivalent interested in experimental physics preferably with about two years teaching or research experience.

V. ASSISTANT REGISTRAR (One post)

Scale of Pay: Rs. 700-40-900-EB-40-1100-50-1300 plus D.A. as admissible.

Qualifications

Essential

(i) A good degree in Arts, Science, Commerce or Business Management. (ii) Must have good knowledge of procedure of general administration or accounting of cash and other transactions preferably both and be able to draft reports and minutes of conferences. (iii) At least 10 years' experience in responsible position under government or in a large educational institution or business organisation of repute.

Desirable

Experience of supervision of recruitment work, meetings and conference work, examination work, students welfare work and proved capacity to understand students and their problems.

Age : Ordinarily not below 30 years.

Note: The post of Assistant Registrar is reserved for SC/ST candidates.

(General candidates are also eligible to apply. The general candidates will be considered if no suitable SC/ST candidates are available for appointment to the vacancy.)

VI. ASSISTANT LIBRARIAN (One post)

Scale of Pay: Rs. 700-40-900-EB-1100-50-1300 plus D.A. as admissible.

Qualification

Essential: First or Second Class B.A./B.Sc./B.Com. Degree plus a First or Second Class M.Lib.Sc. Degree.

OR

First or Second Class M.A./M.Sc./M.Com. Degree and a First or Second Class B.Lib.Sc. or a Diploma in Library Science.

VII. EXECUTIVE ENGINEER (Electrical and Mechanical)

Scale of Pay: Rs. 1100-50-1600 plus D.A. as admissible.

Age: Not less than 35 years.

Qualifications and Experience

Essential

(i) A graduate in Electrical Engineering or equivalent with at least 7 years' experience of which 5 years must have in the execution of capital works and maintenance of electric supply and distribution system with knowledge of works accounting procedure.

(ii) Experience of supervision of mechanical maintenance of water supply systems, automobiles, air conditioners etc.

VIII. ASSISTANT ENGINEER

(CIVIL)—One

ASSISTANT ENGINEER

(ELECTRICAL)—One

Scale of Pay: Rs. 650-30-740-35-810-EB-35-880-40-1000-EB-40-1200 plus D.A. as admissible.

For Assistant Engineer (Civil)

Qualifications

Essential: Graduate in Civil Engineering with a minimum experience of 3 years or diploma holder in Civil Engineering with a minimum experience of

8 years of which at least 5 years experience in Construction, Maintenance and Civil works of public health Engineering.

For Assistant Engineer (Electrical)

Qualifications

Essential: Degree in Electrical Engineering with 3 years experience or diploma in Electrical Engineering with 8 years experience of which at least 5 years experience should relate to PWD, MES, Railways, Electricity Board and IITs.

Application form may be had from the Registrar on request along with an unstamped self-addressed envelope of size 23 cm. x 10cm. Application accompanied with an application fee (non-refundable) of Rs. 3.00 (Re. 0.75 for SC/ST) for the category No. IV and Rs 7.50 (1.87 for SC/ST) for all other categories payable by means of crossed Indian Postal Order to Indian Institute of Technology, Kharagpur at Kharagpur—721 302 post office should reach the Registrar, IIT, Kharagpur—721 302 (West Bengal) by the 1st July, 1978.

A.K. Sur

REGISTRAR

LUCKNOW UNIVERSITY

Advertisement No. 10/1978

Applications are invited for the following posts:

Professors in the grade of Rs. 1500-60-1800-100-2000-125/2-2500

1. Two Professors of Physics (Plan Post)

2. One temporary Professor of Physics

QUALIFICATIONS

Essential

1(a). A doctorate in the subject of study concerned or a Published work of a high standard in that subject; and

(b) Consistently good academic record (that is to say, the overall record of all assessments throughout the academic career of a candidate) with first class or high second class (that is to say, with an aggregate of more than 54% marks)/Master's degree in the subject concerned or equivalent degree of a foreign University in such subject.

Where the Selection Committee is of the opinion that the research work of a candidate, as evidenced either by his thesis or by his published work, is of a very high standard, it may relax any of the qualifications specified in sub-clause (b) of clause 1.

2(a). Experience of teaching post-graduate classes for not less than seven years and/or having conducted and successfully guided research work for seven years in a recognised Institution and having published work of high standard in the subject concerned.

2(b). For posts at Sl. No. 1—for one post of Professor specialisation should be in Solid State Physics (Experimental) and for the other post specialization in the Field of Theoretical Physics.

Preferential

High academic distinctions.

Readers in the grade of Rs. 1200-50-1300-60-1900

3. One Reader in Philosophy (Plan Post)

4. Two Readers in Physics (Plan Posts)

QUALIFICATIONS

Essential

1(a). A doctorate in the subject of study concerned or a published work of a high standard in that subject; and

(b) Consistently good academic record (that is to say, the overall record of all assessments throughout the academic career of a candidate) with first or high second class (that is to say with an aggregate of more than 54% marks) Master's Degree in the subject concerned or equivalent degree of a foreign University in such subject.

Where the Selection Committee is of the opinion that the research work of a candidate, as evidenced either by his thesis or by his published work is of a very high standard, it may relax any of the qualifications specified in sub-clause (b) of clause 1.

2(a) Experience of teaching honours/post-graduate classes for not less than five years and published research work of high standard in the subject.

2(b) For posts at Sl. No. 4 for one post of Reader specialization should be in Solid State Physics (Experimental) and for the other post specialization in the Field of Theoretical Physics.

Preferential

Experience of teaching post-graduate classes and guiding research.

Lecturers in the grade of Rs 700-40-1100-50-1600

5. Five Lecturers in Chemistry

6. Two Lecturers in Applied Economics in the Faculty of Commerce.

QUALIFICATIONS

Essential

1(a) A doctorate in the subject of study concerned or a published work of a very high standard in that subject; and

(b) Consistently good academic record (that is to say, the overall record of all assessments throughout the academic career of a candidate) with first class or high second class (that is to say, with an aggregate of more than 54% marks) Master's degree in the subject concerned or equivalent degree of a foreign University in such subject.

For posts of Lecturers in Applied Economics at Sl. no. 6 candidates possessing Master's Degree in Economics will also be eligible.

Where the Selection Committee is of the opinion that the research work of a candidate, as evidenced either by his thesis or by his published work is of a very high standard, it may relax any of qualifications specified in sub-clause (b) supra.

Preferential

Experience of teaching degree/honours/post-graduate classes for two years.

GENERAL

For purposes of qualifications required for the above posts, the Degree obtained in a subject taught in a Department which is subsequently constituted into separate Departments, shall be deemed to be degree in the subject concerned for the newly constituted Departments.

Benefits of Provident Fund available as admissible under the rules on confirmation for all posts. Period of pro-

bation is one year. It is not necessary to fill any/all of the advertised posts.

For the posts of Lecturers, other things being equal preference will be given to Scheduled Castes/Tribes candidates, who are considered fit. Such candidates should indicate in their applications that they belong to Scheduled Castes/Tribes, attaching certificate from the District Magistrate of the District to which they belong. No other certificate for this purpose will be entertained. In case of Scheduled Castes/Scheduled Tribes candidates interviewed by the Selection Committee if suitable candidates are not available for appointment to the posts of Lecturers, the Selection Committee may recommend appointment of suitable candidate as Research Associate in the scale of Rs. 700-1300 for a period upto three years and these persons could later compete for the posts of Lecturers as and when vacancies occur.

Applications on the prescribed form (available on request, accompanied with a self-addressed envelope of size 23cm x 10cm, free of cost, from the office of the Registrar) with recent testimonials, publications etc. should reach the Registrar, Lucknow University, by Monday, July 3, 1978. The candidates who are in service, must send their applications through proper channel. Application Forms to outstation candidates will be issued by post upto Monday, June 26, 1978.

Those who have applied for the above posts at Sl. No. 1 to 4 in response to our Advertisement No. 6/1978 dated April 10, 1978 need not apply afresh as their old applications will be considered. Such candidates may, however, intimate their additional qualifications and attainments during this period for their specialisation in the respective fields.

B.N. Singh
REGISTRAR

ALIGARH MUSLIM UNIVERSITY **Advertisement No. 10/78-79**

Applications, on the prescribed form, are invited for the following posts:

Candidates must possess Medical Qualifications, included in 1st or 2nd schedule or part II of the 3rd Schedule (other than licentiate qualifications) of the Indian Medical Council Act, 1956. Holders of educational qualifications included in Part II of 3rd Schedule should fulfil the conditions stipulated in Section 13(3) of the Indian Medical Council Act, 1956. Must possess a Basic University or equivalent qualification entered in Schedules under State/Central Medical Registration Act. (For the post at S. No. 1)

1. Reader in Orthopaedics Surgery (Temporary) J.N. Medical College, Scale Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications

M.S. (Orthopaedics)

M.Ch. (Orthopaedics)

Speciality Board of Orth. Surgery (USA)

As Assistant Professor/Lecturer in Orthopaedics for 3 years in a Medical College.

2. Professor of Urdu, Scale Rs. 1500-60-1800-100-2000-125/2-2500 plus allowances.

Qualifications: ordinarily required

(a) A first or High Second Class Master's Degree in Urdu of an Indian University. (a) A research degree of a Doctorate standard or published work of a high standard, and (c) Atleast ten years experience of teaching postgraduate classes and guiding research.

3. Reader in Political Science (International Organisation) Scale Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications: ordinarily required

(a) A first or high second class Master's Degree in the subject concerned of an Indian University or an equivalent foreign qualification; (b) A research degree of a doctorate standard or published work of a high standard; and (c) Atleast five years experience of teaching postgraduate classes and some experience of guiding research.

4. Reader in Economics (Plan Post) (Public Finance), Scale Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications: ordinarily required

(a) A first or a high second class Master's Degree in Economics with Public Finance as a special paper of an Indian University or equivalent foreign qualification; (b) Research degree of a doctorate standard or published work of high standard in the field of Public Finance; and (c) Atleast five years experience of teaching postgraduate classes in Public Finance and some experience of guiding research.

5. Lecturer in Zoology (Temporary but likely to become permanent) Scale Rs. 700-40-1100-50-1600 plus allowances.

Qualifications

(a) A Doctor's Degree or research work of an equally high standard; and (b) consistently good academic record with 1st or high 2nd class (B in the seven point scale) Master's Degree in a relevant subject or an equivalent degree of a foreign University.

Having regard to the need for developing interdisciplinary programmes, the degrees in (a) and (b) above may be in relevant subjects.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a consistently good academic record (weightage being given to M. Phil. or equivalent degree or research work of quality) may be appointed provided he has done research work for atleast two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's Degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Prescribed application forms and instructions may be had from the Deputy Registrar (Executive) either personally or by sending a self-addressed envelope of 23 x 10 cm. Last date for receipt of applications is 20th June 1978. Incomplete applications and those received late may not be considered.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T.A. equal to one single Second Class Railway fare only.

Jamalur Rahman
REGISTRAR

BANARAS HINDU UNIVERSITY **NOTIFICATION**

The following posts were advertised vide Advertisement Nos. 11/1975-76 dated September 16, 1975, No. 11/1976-77 dated September 28, 1976, No. 18/1976-77 dated February 28, 1977, No. 19/1976-77 dated March 2, 1977, No. 20/1976-77 dated March 26, 1977, No. 2/1977-78 dated May 2, 1977, No. 3/1977-78 dated May 12, 1977, No. 5/1977-78 dated May 24, 1977, No. 8/1977-78 dated August 1, 1977, No. 9/1977-78 dated August 18, 1977 and No. 11/1977-78 dated October 5, 1977.

1. FACULTY OF ARTS

(a) Professors in

- (1) Sikh Religion & Philosophy,
- (2) Urdu, (3) English, (4) Library and Information Science, (5) Ancient Indian History, Culture & Archaeology, (6) Indian Civilisation and Culture, (7) Sanskrit, (8) Philosophy.

(b) Readers in

- (1) Ancient Indian History, Culture and Archaeology (three), (2) Art and Architecture, (3) Philosophy, (4) Hindi (four), (5) Pali, (6) Physical Education, (7) Journalism and Mass Communication, (8) German, (9) English (two).

(c) Lecturers in

- (1) Art & Architecture (two), (2) Arabic, (3) Persian, (4) Journalism and Mass Communication, (5) Hindi (three), (6) Urdu (two), (7) Chinese, (8) English (two), (9) German (two), (10) French (two), (11) Marathi, (12) Linguistics, (13) Ancient Indian History & Archaeology.

2. FACULTY OF SCIENCE

(a) Professors in

- (1) Geophysics (two), (2) Physics (two), (3) Geography, (4) Chemistry (two), (5) Zoology, (6) Geology (7) Botany, (8) Computer Science

(b) Readers in

- (1) Chemistry (four), (2) Geophysics (four), (3) Geology (two), (4) Botany (two), (5) Zoology (two), (6) Geography (three), (7) Mathematics & Statistics (two), (8) Computer Science (two).

(c) Lecturers in

- (1) Chemistry (twelve), (2) Physics (four), (3) Geophysics (five), (4) Geology, (5) Botany (four), (6) Zoology (two), (7) Mathematics & Statistics (three), (8) Computer Science (two).

3. FACULTY OF SOCIAL SCIENCES

- (a) **Professors in**
(1) Economics (two), (2) Psychology, (3) History
- (b) **Readers in**
(1) Economics, (2) Sociology (two), (3) History, (4) Political Science (two)
- (c) **Lecturers in**
(1) Economics (two), (2) Sociology, (3) Psychology, (4) History (two), (5) Political Science (three)

4. FACULTY OF COMMERCE & MANAGEMENT STUDIES

- (a) **Professors in**
(1) Commerce (two)
- (b) **Readers in**
(1) Commerce
- (c) **Lecturers in**
(1) Commerce (four)

5. FACULTY OF LAW

- (a) **Professor in**
(1) Law
- (b) **Readers in**
(1) Law (two)
- (c) **Lecturers in**
(1) Law (five)

6. FACULTY OF EDUCATION

- (a) **Professors in**
(1) Education (two)
- (b) **Readers in**
(1) Education (two)
- (c) **Lecturers in**
(1) Education (three), (2) Music

7. FACULTY OF AGRICULTURE

- (a) **Professor in**
(1) Plant Physiology
- (b) **Readers in**
(1) Agricultural Statistics
- (c) **Lecturers in**
(1) Entomology, (2) Genetics and Plant Breeding

8. FACULTY OF MUSIC & FINE ARTS

- (a) **Professors in**
(1) Vocal Music, (2) Applied Arts, (3) Sculpture
- (b) **Readers in**
(1) Instrumental Music, (2) Plastic Arts
- (c) **Lecturers in**
(1) History of Arts, (2) Mridangam, (3) Dance (Bharat Natyam)

9. FACULTY OF ORIENTAL LEARNING & THEOLOGY

- (a) **Professor in**
(1) Sahitya/Mimansa
- (b) **Readers in**
(1) Vyakaran (two), (2) Jyotish, (3) Jain Baudh Darshan, (4) Vedant, (5) Vedic Research, (6) Mimansa
- (c) **Lecturers in**
(1) Veda, (2) Purana

10. INSTITUTE OF MEDICAL SCIENCES

- (a) **Professors in**
(1) Anatomy, (2) Physiology, (3) Biochemistry, (4) Pathology, (5) Medicine (four), (6) Surgery (six), (7) Biophysics, (8) Dental Surgery
- (b) **Readers in**
(1) Anatomy (two), (2) Pathology, (3) Medicine (three), (4) Surgery (two), (5) Microbiology (two), (6) Obstetrics & Gynaecology, (7) Radiotherapy, (8) Psychiatry, (9) Clinical Psychology, (10) Anaes-

thesiology, (11) Radiology, (12) Paediatrics, (13) Dental Surgery, (14) Health Statistics, (15) Preventive & Social Medicine (two), (16) Epidemiology, (17) Dravyaguna, (18) Medicinal Chemistry, (19) Kayachikitsa

(c) Lecturers in

(1) Anatomy (three), (2) Biochemistry, (3) Pharmacology, (4) Microbiology (three), (5) Forensic Medicine (two), (6) Medicine (four), (7) Surgery, (8) Orthopaedics, (9) Psychiatry (two), (10) Radiology, (11) Preventive and Social Medicine, (12) Sociology, (13) Paediatrics (two), (14) Child Psychology, (15) Basic Principles, (16) Radiotherapy and Radiation Medicine, (17) Anaesthesiology (three), (18) Pathology (two)

11. INSTITUTE OF TECHNOLOGY

(a) Professors in

(1) Mechanical Engineering, (2) Chemical Engineering (3) Metallurgical Engineering, (4) Mining Engineering, (5) Pharmaceutics, (6) Applied Mathematics (7) Chemical Technology

(b) Readers in

(1) Mechanical Engineering (four), (2) Chemical Engineering (three), (3) Mining Engineering (three), (4) Pharmaceutics, (5) Pharmacology, (6) Pharmaceutical Chemistry, (7) Electrical Engineering, (8) Ceramic Engineering (9) Organic Technology, (10) Inorganic Technology, (11) Instrumentation and Process Control.

(c) Lecturers in

(1) Mechanical Engineering (seven), (2) Chemical Engineering (3) Drawing and Design, (4) Metallurgical Engineering, (5) Ore Dressing, (6) Pharmaceutics, (7) Pharmaceutical Chemistry (8) Electrical Engineering (three), (9) Electronics Engineering/Telecommunication Engineering (three), (10) Civil Engineering (four), (11) Ceramic Engineering, (12) Applied Physics (three), (13) Applied Chemistry, (14) Applied Mathematics (two)

It is hereby notified that the last date for receipt of application in all the above cases is extended upto Monday, June 26, 1978. Those who have already applied need not apply, but are free to send additional relevant information.

Further details about each post, Application Forms etc. can be had by sending a self-addressed, Re 0.85 paise stamped envelope addressed to the Registrar (Selection Committee Section), Banaras Hindu University, Varanasi-221005 by June 20, 1978.

UNIVERSITY OF HYDERABAD

Advertisement No. Estt./1/78

Applications on the prescribed form are invited for the posts of Professors, Readers and Lecturers as detailed below for various Schools/Departments/ Centres of Study in the University.

SCALES OF PAY

1. Professor : Rs. 1500-60-1800-100-2000-125/2-2500

2. Reader : Rs. 1200-50-1300-60-1900

3. Lecturer : Rs. 700-40-1100-50-1600

Approximate emoluments at the minimum of the scale for Professor: Rs. 2280/-; Reader: Rs. 1932/- and Lecturer: Rs. 1262/-.

QUALIFICATIONS AND EXPERIENCE

Professor

A first or high second class Master's degree in the subject concerned and consistently good academic career; a Doctorate Degree and considerable published work of high standard; Ten years Post-graduate teaching experience and experience of guiding research work.

Reader

A first or high second class Master's Degree in the subject concerned; A Doctorate Degree and published work of high standard; 5 years experience of teaching in Honours/Post-graduate classes or Post-doctoral research.

Lecturer

(i) A Doctorate Degree or research work of equally high standard and (ii) Consistently good academic record with first or high second class (B in the seven point scale) Master's degree in the relevant subject or an equivalent degree of a foreign University.

The Selection Committee may recommend relaxation of any of the qualifications at (i) and (ii) above subject to certain conditions provided a candidate has done research work for at least two years or has practical experience in a research laboratory/organisation or has published work of high standard.

Details of Posts, Broad Areas of Research and Specialisation

1. School of Life Sciences

Professor (4); Readers (6) and Lecturers (5)

Molecular Biology, Biochemical genetics; Macro-molecules, Neurochemistry & Biology; Reproductive & Developmental Biology; Enzymology; Membrane Biochemistry, transport & biology; and Biomedical Research. However, candidates with exceptionally good background in any branch of Life Sciences can also be considered.

2. School of Mathematics and Computer/Information Sciences

Professor (1); Readers (2) and Lecturer (1) in Basic Mathematics.

Professor (1); Reader (1) and Lecturer (1) in Probability and Statistics/Optimal Control/Operation Research.

Professor (1); Reader (1) in Computer/Information Sciences.

Reader (1) and Lecturer (1) in Propagation of Electromagnetic Waves, Propagation of Seismic Waves, Rock Mechanics, Fluid Dynamics and Applied Group-theoretic Methods.

3. School of Social Sciences

(a) Department of Economics

Professors (3) in Econometrics/Mathematical/Statistical Economics/Institutional Economics/

Social aspects of Planning and Development.

Readers (6) and Lecturers (6) in Econometrics/Mathematical/Statistical Economics/Economic Theory/Quantitative Methods/Applied Economics, etc.

(b) Department of History

Professor (1) in Social Economic History/Regional History or Ancient History.

Readers (3) and Lecturers (3) in Ancient/Medieval and Modern History/Indian and non-Indian.

(c) Department of Political Science

Professors (2); Readers (3) and Lecturers (3) in Political Theory/Political Development/International Relations and Order.

(d) Department of Sociology and Anthropology

Professors (2); Readers (3) and Lecturers (3) in Sociology/Social and Cultural Anthropology.

(e) Centre of Regional Studies

Professor (1) in Modern Urdu Literature; Readers (4) one each in Modern Telugu Literature, Modern Urdu Literature and two in Modern Art and Architecture/Regional Sociology/Socio Economic History.

Lecturers (5) one each in Modern Urdu Literature, Modern Telugu Literature and three in Modern Art and Architecture/Regional Sociology/Socio Economic History/Regional Economics.

(f) Centre of Human Sciences

Professor (1) in Psychology; Reader (1) in Social Economics and Lecturer (1) in Ecology (2) in Basic Psychology/Social Psychology.

4. School of Chemistry

Professors (3); Readers (9) and Lecturers (2) in Physical/Organic/Inorganic/Analytical/Solid State Chemistry/Photo Chemistry/Physical Methods/Theoretical Chemistry.

5. School of Humanities

(a) Department of Philosophy

Professor (1); Readers (2) and Lecturer (2) in Philosophy of Social Sciences/Philosophy of Natural and Exact Sciences/Classical Philosophy.

(b) Department of English

Reader (1) & Lecturer (1) in Modern English & Structure; Applied Linguistics; Stylistics & Phonetics. Ability to teach literature courses will be an additional advantage.

(c) Department of Hindi

Professor (1); Readers (2) and Lecturers (2) in Comparative Study/Bhakti Movement and Bhakti Literature/Dakhini Language & Literature.

GENERAL

For the posts of Lecturers, preference will be given to Scheduled Castes and Scheduled tribes candidates who are considered fit.

In addition to salary, the posts carry allowances as per University rules which at present are equivalent to those admissible to Central Government employees posted in Hyderabad. Retirement benefits as per University rules.

Applications on prescribed form (available from the Assistant Registrar (Admn) on request accompanied by a self-addressed stamped (55 paise envelope) with the requisite application fee of Rs. 7.50 (non-refundable) in the form of Crossed Postal order drawn in favour of the Finance Officer and other documents/certificates/publications should reach the Registrar, University of Hyderabad, 'Golden Threshold' Nampally Station Road, Hyderabad-500001 on or before 30-6-1978. Candidates who have already applied for the posts of Readers and Lecturers in Economics, History, Regional Studies (Urdu or Telugu), Human Sciences (Biology, Ecology, Philosophy, etc.) need not apply again. However, they may send their latest bio-data and change of address, if any, etc. for consideration.

Candidates called for interview from out-stations will be paid contribution equivalent to return single second class railway fare towards their Journey expenses. Candidates already in service should submit their applications through proper channel. Applications received after the last date or without complete information or without the requisite application fee may not be entertained.

It will be open to the University to consider the names of suitable candidates who may not have applied. Relaxation of any of the qualifications; age, experience, etc. may be made in exceptional cases in respect of all posts on the recommendation of the Selection Committee. Canvassing in any form for or on behalf of any candidate will disqualify such candidature.

P.V. George
REGISTRAR

MADURAI UNIVERSITY

Notification No. 3/Advt/V/78

Applications in the prescribed form are invited in the University for the following posts:

Department of Education

One Lecturer in Education

Department of Sociology

One Lecturer in Sociology

Department of Political Science

One Lecturer in Political Science

Department of Geography

One Professor in Human Geography
One Lecturer in Agricultural Geography

Department of French

One Reader in French
One Lecturer in French

Department of Library Science

One Lecturer in Library Science

Department of English

Two Lecturers in English (One Permanent and one Temporary)

Department of Physics

Two Lecturers in Physics

Institute of Correspondence Course and Continuing Education

Three Lecturers in English

Two Lecturers in Economics

One Lecturer in History

Three Lecturers in Commerce

Two Lecturers in Law

Scales of Pay

Professor: Rs. 1500-60-1800-100-2000-125/2-2500

Reader: Rs. 1200-50-1300-60-1900

Lecturer: Rs. 700-40-1100-50-1600

Higher starting salary will be offered in deserving cases.

Preference would be given to Scheduled Caste/Scheduled Tribe candidates who are considered fit in respect of Lecturers' posts.

A minimum of ten years' teaching experience for Professors and five years' teaching experience for Readers and three years' teaching experience for Lecturers at the Post-Graduate level is essential.

Applicants for the posts in the Institute of Correspondence Course and Continuing Education will have to appear for a written test which will be conducted at the time of interview at Palkalainagar.

The prescribed form of application and full details regarding qualifications, field of specialisation and experience required can be got from the undersigned on requisition accompanied by (1) a self-addressed envelope with postage stamps to the value of 0.70 paise affixed thereon and (2) State Bank of India Challan for Rs. 5 (Account No. I) or Demand Draft for Rs. 5 payable at Madurai drawn in favour of the Registrar, Madurai University, Madurai-625021.

The last date for receipt of applications is 4th July 1978. Applications received after due date will not be considered.

B. Murugan
REGISTRAR

**KONKAN KRISHI VIDYAPEETH
DAPOLI: DIST: RATNAGIRI**

No. EST/AI/ADVT-XIV/of 1978

Applications are invited for the post of Dean, Faculty of Agriculture, Konkan Krishi Vidyapeeth, Dapoli, Dist: Ratnagiri.

Qualifications

Ph. D. degree in Agriculture plus 15 years' experience after acquiring post-graduate degree in the field of teaching, research and/or extension education

THE UNIVERSITY OF BURDWAN

Advertisement No. 4/77-78

Dated 31st May, 1978

In partial modification of Advertisement No. 2/77-78 dated 10th May, 1978 it is further notified that specialisation required for posts of Reader and Lecturer in Law are as follows:

Administrative Law/Taxation Law/Interpretation of Statutes and Principle of Legislation/Constitutional Law/Legal Remedies/Commercial Laws and/or any branch of procedural Laws.

REGISTRAR

plus experience in a responsible position in technical administration and ability to initiate and organize research, teaching and extension education

OR

Master's degree in Agriculture plus 15 years' experience after acquiring a post-graduate degree in the field of teaching, research and/or extension education plus experience in a responsible position in technical administration and ability to initiate and organize research, teaching and/or extension education plus outstanding achievements in the academic and research fields.

Scale of Pay

Rs. 1600-100-2000 (likely to be revised) plus other allowances admissible under the rules.

Age Limit

Ordinarily 40 years on 30-6-1978 but relaxable.

The post is to be filled in temporarily for a period of four years or till the substantive holder of this post joins it whichever is earlier.

Application forms can be obtained from the Registrar, Konkan Krishi Vidyapeeth, Dapoli (Pin 415 712), Dist: Ratnagiri on furnishing a self addressed stamped envelope (10cm x 25 cm) affixing postage stamps of the value of 55 paise and a crossed Indian Postal Order of the value of Re. 1 payable to the Comptroller, Konkan Krishi Vidyapeeth, Dapoli. Completed application forms accompanied by a crossed Indian Postal Order of the value of Rs. 2.50 payable to the Comptroller, should reach this office not later than 30th June, 1978. Applications received after this date will not be entertained. Persons applying from outside India may apply on plain paper giving full details regarding age, qualifications, experience, etc. Payment of application fee will not be necessary in their case.

Persons already in service should apply through proper channel.

Candidates will have to attend interview at their own cost.

Canvassing in any form will disqualify a candidate for Employment under this University.

B.B. Rane
REGISTRAR

UNIVERSITY OF HYDERABAD

Advertisement No. Estt. 2/78

Applications on the prescribed form are invited for the following positions in the University.

1. Librarian: Rs. 1500-60-1800-100-2000.

Good academic record with first or high second class Master's degree in Arts, Science or Commerce with first or high second class Master's degree in Library Science. 10 years experience in a Library of a large educational/research organisation, preferably in a University as a professional senior or Librarian. Thorough knowledge of classification, cataloguing and other library/information services.

Desirable

Experience of teaching and guiding research with publications.

However, a candidate will be eligible for appointment as Librarian in the scale of pay of Rs. 1500-2500 provided he fulfils the following essential qualifications:

Good academic record with first or high second class Master's degree in a subject other than Library Science with a doctorate degree or equivalent published work of high standard and preferably with experience of guiding research and with knowledge/experience of Library services and management. At least 10 years of teaching post-graduate classes and research; or of research in an independent capacity in an organisation of higher learning and research or in a responsible post in a library for advanced students and research workers.

Age: Not more than 50 years.

2. Deputy Registrar: Rs. 1100-50-1600

A Degree with about 15 years post qualification experience in a University/Government/Semi-Government/Autonomous organisation dealing with educational/research/cultural matters with ability to control, guide and supervise the staff. Must possess 3 years experience in a senior executive position, in an organisation of repute. Preference will be given to candidates possessing Post-graduate degree with familiarity in conducting meetings of Committees, Conferences, preparation of agenda, minutes, general administration, development work, examination work, etc. in an institution of higher learning. Ability to adapt government rules, regulations and procedures in a flexible manner to the growing requirements of a large educational institution.

Age: Not more than 45 years.

3. Deputy Finance Officer: Rs. 1100-50-1600

A Degree and pass at the final examination of the Institute of Chartered Accountants or Cost and Works Accountants or SAS or an equivalent examination. About 12 years post qualification experience of accounts work, financial and budgetary control, cost accounting and management reporting, preferably in a University or large educational organisation. At least 3 years experience in a senior executive position in an organisation of repute. Association with and experience in planning and control of accounts, maintenance of capital expenditure, negotiations of contracts for procurement of machinery and material, scrutiny of bills of suppliers and contractors.

Age: Not more than 45 years.

4. Assistant Finance Officer: Rs. 700-40-900-EB-40-1100-50-1300

A Degree and pass at the final examination of the Institute of Chartered Accountants or Cost & Works Accountants or SAS or an equivalent professional examination. About 8 years post qualification experience in an organisation of repute out of which at least 5 years in a senior supervisory level. Familiarity with all types of accounting procedure, capital expenditure and control and planning of capital budget. Association with and experience in negotiation

of contracts for procurement of machinery and materials, scrutiny of bills of suppliers and contractors etc.

Age: Not more than 42 years.

5. Assistant Engineer (Civil)

Rs. 650-30-740-35-810-EB-35-880-40-1000-EB-40-1200

A Degree in Civil Engineering or equivalent with 5 years experience in civil construction works in a reputed construction organisation. Preference will be given to candidates conversant with concrete technology, planning and programming of large construction works, roads, sewage work, etc.

Age: Not more than 35 years.

6. Foreman (Workshop)

Rs. 550-25-750-EB-30-900.

A Degree in Mechanical Engineering with 5 years experience in a workshop of repute or a Diploma in Mechanical Engineering with 7 years experience. Experience should be in fabrication, maintenance of machines, organising the work of lower staff, planning, production, design, etc.

Age: Not more than 35 years.

7. Senior Technical Assistant (Stores & Purchase) Rs. 550-25-750-EB-30-900.

A Degree with 10 years experience of which 3 years as a Senior Purchase Assistant/Store Keeper in a large educational institution or Government Department or commercial undertaking in handling stores and purchases. Conversant with material handling stores lay out, inventory control, requirement forecasts, procedure relating to import licence and customs clearance.

Age: Not more than 40 years.

8. Junior Engineer (Civil): Rs. 425-15-500-EB-15-560-20-700

A Degree in Civil Engineering with 3 years experience of supervision of construction or maintenance work or a Diploma in Civil Engineering with 5 years experience in supervision of construction/maintenance work.

Age: Not more than 30 years

9. Junior Engineer (Electrical)

Rs. 425-15-500-EB-15-560-20-700

A Degree in Electrical Engineering with about 3 years experience in electrical installation, maintenance etc. or a Diploma in Electrical Engineering with about 5 years experience. Candidates with experience of planning and design, distribution systems, erection and maintenance of sub-stations, internal and external electrification, etc. will be preferred.

Age: Not more than 35 years.

10. Junior Horticulturist

Rs. 425-15-500-EB-15-560-20-700

Matriculation or equivalent with Certificate or Diploma in Agriculture/Horticulture or extensive training in agricultural/horticultural operations with practical experience of not less than 7 years in the field in a Government/University or other organisation of repute.

Age: Not more than 45 years.

11. Technical Assistant (Glass Blowing)

Rs. 425-15-500-EB-15-560-20-700.

Matriculation or equivalent with a Diploma or Certificate in Glass Blow-

ing from a recognised Institute with 5 years experience or Matriculation with 10 years experience in a Glass Blowing shop of repute.
Age: Not more than 35 years.

12. Personal Assistant

Rs. 425-15-500-EB-15-560-20-700

A Degree with 5 years experience or Intermediate with 7 years experience or SSC/SSLC with 9 years experience as a Stenographer in a University/Government Department/Organisation of repute. Sound knowledge of secretarial practice, ability to prepare drafts/notes and handle office correspondence independently. Minimum speed of 120 w.p.m. and 50 w.p.m. in English Shorthand and Typewriting respectively. Preference will be given to candidates who have passed Higher Diploma both in typewriting and shorthand.
Age: Not more than 35 years.

13. Professional Assistants

Rs. 425-15-500-EB-15-560-20-700

A Degree with a degree or diploma in Library Science with 3 years experience in a big library, preferably in a University/College or similar educational institution. Knowledge of typewriting desirable.

Age: Not more than 35 years.

14. Sanitary Inspector

Rs. 425-15-500-EB-15-560-20-700

Matriculation with a Diploma/Certificate of Sanitary Inspector. About 5 years experience in case of Diploma holder and 7 years in case of certificate holder in a sanitation work/supervision of conservancy work in large organisation. Ability to supervise the work of lower subordinate staff in a conservancy department.

Age: Not more than 40 years.

15. Technical Assistant

Rs. 425-15-500-EB-15-560-20-700

A Diploma in Civil/Electrical Engineering with 5 years experience in preparation of estimates, drawings, etc. for water supply and electric supply both internal and external in large organisation of repute.

Age: Not more than 35 years.

16 Draughtsman

Rs. 425-15-500-EB-15-560-20-700

Matriculation with a diploma in Civil Engineering or National Trade Certificate in Draughtsmanship. About 5 years experience for Diploma holders and 7 years experience for certificate holders in an engineering/design office of repute engaged in design of buildings, furniture, etc. Should be conversant with procedure for preparation of estimates, analysis of rates, etc.

Age: Not more than 35 years.

17. Laboratory Technician (Health Centre): Rs. 380-12-500-EB-15-560.

Matriculation or equivalent; Diploma or certificate of Laboratory technician from a recognised institution. Minimum 5 years experience of work in an established laboratory of Hospital/Medical College. Candidates should be able to conduct pathological tests independently.

Age: Not more than 35 years.

18. Cashier: Rs. 330-10-380-EB-12-500-EB-15-560.

A Degree with 3 years experience in dealing with cash/cash book, preparation of accounts, Bank reconciliation, maintenance of ledger and general accounts work. Good knowledge of financial procedure, scrutiny of bills of purchase, etc. in a large organisation, preferably in a University. Candidates should have neat and legible handwriting

Age: Not more than 35 years.

19. Store Keeper

Rs. 330-10-380-EB-12-500-EB-15-560.

A Degree with at least 3 years experience of handling stores and purchase in a large Educational Institution/Government Department/Commercial Undertaking.

Age: Not more than 35 years.

20. Office Assistant

Rs. 330-10-380-EB-12-500-EB-15-560

A Degree with 3 years experience of work in a University/Government Department or in an organisation of repute dealing with establishment/academic/examination/development/accounts/meetings/stores and purchase matters.

Age: Not more than 35 years.

21. Steno-Typist

Rs. 330-10-380-EB-12-500-EB-15-560.

Matriculation with a speed of 100-40 w.p.m. in English Shorthand and Typewriting respectively. Experience: 3 years experience as a Steno-typist in an organisation of repute. Graduates will be preferred.

Age: Not more than 35 years.

22. Care-Taker

Rs. 330-10-380-EB-12-500-EB-15-560.

A Degree with 3 years experience as Care-taker in an organisation of repute. Ability to control lower staff and supervise their work. Those with knowledge of typing will be preferred.

Age: Not more than 45 years.

23. Junior Library Assistant

Rs. 260-6-290-EB-6-326-8-366-EB-8-390-10-400.

A Degree with a Diploma-Certificate in Library Science and about 2 years experience of work in a library of repute.

Age: Not more than 30 years.

24. Tracer: Rs. 260-6-290-EB-6-326-8-366-EB-8-390-10-400.

Matriculation with Diploma or Certificate in Draughtsmanship with about 2 years experience in case of Diploma holders and 4 years experience in case of Certificate holders in an Engineering/Design Office.

Age: Not more than 30 years.

GENERAL

Reservation exists for candidates belonging to Scheduled Castes and Tribes as per Central Government rules.

In addition to pay, the posts carry allowances as per University rules which at present are equivalent to those admissible to Central Government employees posted in Hyderabad. Retirement benefits as per University rules.

Approximate total emoluments admissible at the minimum of various scales of pay are:

Rs. 1500-2500 : Rs. 2163;
Rs. 1100-1600 : Rs. 1693;
Rs. 700-1300 : Rs. 1141;
Rs. 650-1200 : Rs. 1060;
Rs. 550-900 : Rs. 896;
Rs. 425-700 : Rs. 694;
Rs. 380-560 : Rs. 618;
Rs. 330-560 : Rs. 557;
Rs. 260-400 : Rs. 462;

Applications on prescribed form (available from the Assistant Registrar (Admn) on request accompanied by a self-addressed stamped (55 paise envelope) with the requisite application fee (non-refundable) and other documents/certificates should reach the Registrar, University of Hyderabad, 'Golden Threshold', Nampally Station Road, Hyderabad-500001 on or before 10th July, 1978.

Candidates called for interview from out stations will be paid contribution equivalent to return single second class railway fare towards their journey expenses. Candidates already in service should submit their applications through proper channel. Applications received after the last date or without complete information or without the requisite postal orders may not be entertained.

It will be open to the University to consider the names of suitable candidates who may not have applied. Relaxation of any of the qualifications, age, experience, etc., may be made in exceptional cases in respect of all posts on the recommendation of the Selection Committee. Canvassing in any form for or on behalf of the candidates will disqualify such candidature.

REGISTRAR

International Council on Social Welfare

175, D.N. Road Bombay-1

International Social Work a quarterly journal (size 18.5 cms x 25 cms), offers, in its 60 pages, a global coverage to social policy, programmes, social work education, practice and research. Yearly index supplied free. Subscription: India: Rs 52.50 for one year; Rs. 90.00 for two years.

Foreign—U.S. \$ 7.00 for one year; U.S. \$ 12.00 for two years.

10 per cent discount to book agencies.

Write to Managing Editor, International Social Work, International Council on Social Welfare, Regional Office for Asia and Western Pacific, Bombay-400 001, India.

**BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE,
PILANI (Raj.) 333031 INDIA**

Advertisement No. FR/1/78

Applications are invited from interested persons in all disciplines under both academic and research designations for a combination of various functions such as (1) course development, educational research and institutional development, (2) interdisciplinary research in identified nationally relevant areas, (3) practice school and collaborative education and consultancy with industries, (4) development of central laboratory facilities.

Those who are interested may ask for a booklet entitled "Introducing BITS to Prospective Faculty" for further details from the Registrar, B.I.T.S., Pilani.

REGISTRAR

**GURU NANAK DEV UNIVERSITY
AMRITSAR**

Advertisement No. 7/78

Applications are invited for the following posts on prescribed form obtainable (free of cost) from office of the Registrar, Guru Nank Dev University, Amritsar by making a written request accompanied by self-addressed stamped envelope of 23 x 10 cms. so as to reach this office by 26-6-1978 from persons residing in India and by 4.7.1978 from persons residing in foreign countries alongwith crossed postal order(s) for Rs. 7.50 for posts at Sr. No. 1 to 5 and Rs. 5/- for posts at Sr. No. 6 drawn in favour of Registrar, Guru Nanak Dev University, Amritsar. Application fee is not refundable. Note: Persons already in employment must send their applications through their employers.

Grade: (plus allowances as admissible under University rules)

1. Professors (grade Rs. 1500-60-1800-100-2000-125/2-2500) in Sociology-1 and Mathematics-1.

2. Readers (Grade Rs. 1200-50-1300-60-1900) in Economics-2; Psychology-1; Library Science-1; Guru Nanak Studies-1; Punjabi Language, Literature & Culture-1; Law-2; Punjabi-1; Statistics/Mathematics-1.

3. Lecturers (Grade Rs. 700-40-1100-50-1600) in Economics-5; Political Science-1; Law-1; Hindi-2; German-1; Guru Nank Studies-3; Psychology-1; Public Administration for University Evening College, Jullundur-1; Statistics-1; Mathematics-1.

4. Reference Assistant for Guru Nanak Studies Department-1. (Grade Rs. 550-20-650-25-750)

5. Research Assistants in Punjabi Language, Literature & Culture-4 (Grade Rs. 550-20-650-25-750)

6. Research Fellows (Rs. 400/- pm. fixed) in Hindi-1; Sociology-2. Political Science-1.

QUALIFICATIONS

For the posts of Professors: An eminent scholar with published work of high

quality actively engaged in research. Ten years' experience of teaching and/or research. Experience of guiding research at doctoral level. OR An outstanding scholar with established reputation who has made significant contribution to knowledge.

For Posts of Readers: Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

About five years' experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding research work.

Note: In case of Reader in Library Science, the Selection Committee may relax the condition of doctoral degree or equivalent published work if the candidate is found, otherwise suitable for the post.

For Posts of Lecturers: (A) A Doctor's degree or research work of an equally high standard; and (B) consistently good academic record with 1st or high 2nd class (B in the seven point scale) Master's degree in a relevant subject or an equivalent degree of a foreign University.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of every high standard, it may relax any of the qualifications prescribed in (B) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a consistently good academic record (weightage being given to M. Phil or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research Laboratory/Organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Explanation: Candidates for being eligible for recruitment to the posts of Lecturers must have a 1st or High 2nd Class (B in the seven point scale) at the Master's level and for determining consistently good academic record, average of 50-55 per cent may be expected at the two examinations prior to the Master's degree examination.

Note: Knowledge of Punjabi and a foreign language other than English will be an additional qualification for the posts of Professors, Readers and Lecturers.

Other essential and desirable qualifications for the post of Reader in Guru

Nanak Studies Department: Essential: (i) M.A. History (specialization: Sikh History); (ii) Publications in English and Punjabi/Hindi; (iii) Evidence of high quality post-doctoral research. Desirable: Knowledge of Persian/Urdu and Hindi.

Other essential qualifications for the post of Reader in Punjabi Language, Literature & Culture: 1st or high 2nd class (b+) Master's degree of an Indian University in Punjabi or Linguistics or an equivalent degree of a foreign University with the proviso that the candidate having a Master's degree in one must have a sound knowledge of the other.

Other essential and desirable qualification for the posts of Lecturers in Guru Nanak Studies Department: For 1st post (Literature): (i) M.A. Punjabi/Religious Studies; (ii) Adequate knowledge of Sikh Literature, especially of Guru Granth Sahib; (iii) Experience of editing Gurmukhi Manuscripts; (iv) Evidence of post-doctoral research. Desirable: Proficiency in Hindi/Sanskrit/Persian/Urdu. For 2nd post: (Lexicography): Essential: M. A. Punjabi/Hindi/Sanskrit/Linguistics. Desirable: (i) Adequate knowledge of Sikh Scripture (ii) Diploma in Lexicography/Etymology for those who do not possess Master's degree in Linguistics. For 3rd post (Editing an English Journal): (i) M.A. in English/History/Religious Studies/Sociology; (ii) Sound knowledge of Sikh Religion/History/Literature; (iii) Experience of working in an English Journal/Newspaper of good standing in an editorial capacity. (iv) Knowledge of printing techniques and proof-reading. Note: A written test will also be held for this post.

For post at Sr. No. 4: Essential: (i) First or Second Class Master's degree of an Indian University of equivalent qualification of a foreign University in the subject of History (preferably Medieval History) (ii) Specialization in Sikh History. (iii) Knowledge of Punjabi in Gurmukhi Script. Preferential: Knowledge of Persian.

For posts at Sr. No. 5 For first three posts: 1st or high 2nd class Master's degree in Punjabi. (ii) Aptitude for research in Folklore/Culture/Literature. For 4th post: (i) At least 2nd class Master's degree in Linguistics. (ii) Master's degree or high proficiency in Punjabi. (iii) Aptitude for research in Linguistics/Cultural Anthropology.

For post at Sr. No. 6 (Research Fellow in Hindi): Essential: (i) First or High Second Class (B+) Master's degree in Hindi. Desirable: (i) Research experience and/or proper aptitude for research. (Inter disciplinary area of research would be undertaken).

For posts at Sr. No. 6 (Research Fellows in Sociology and Political Science) (i) 1st or high 2nd Class Master's degree in Sociology with good academic record. (ii) Aptitude for research.

SPECIALIZATION

Professor of Mathematics: Analysis / algebraic topology / differential manifolds/probability theory/theoretical

seismology / systems/controls non-associative rings and algebras/homological algebra/commutative rings.

Readers in Economics: For 1st post: Econometrics and Economic Statistics, For 2nd post: Monetary theory and policy and banking/Industrial Economics. A good grounding in Mathematics and quantitative methods will be desirable.

Reader in Psychology: Experimental Psychology in the area of Learning, Motivation, Personality and Perception. **Readers in Law:** Constitutional Law/Family Law.

Reader in Statistics/Mathematics: Statistics: Probability theory/Econometric/Applied Statistics. **Mathematics:** Analysis/differential and integral equations/any branch of topology/homological algebra/algebraic number theory/fluid mechanics / thermodynamics / quantum mechanics.

Lecturers in Economics: Economic Statistics—Techniques and applications/Mathematical Economics/Money and Banking/Public Finance/Econometrics/Industrial Economics/Agricultural Economics and Cooperation/Economics of Socialism and Planning. A good grounding in Mathematics and quantitative methods will be desirable.

Lecturer in Law: Property Law and International Law.

Lecturers in Hindi: (i) Philosophy of History (Medieval and Modern Periods would be preferred); (ii) Aesthetics-cum-poetics. (Knowledge of one foreign language, besides English/other Indian Language, besides Punjabi will be preferred/proficiency in translation is also desirable).

Lecturers in Psychology: (i) Social Psychology; (ii) Psychology of cognition. (iii) Child Psychology; (iv) Personality. **Lecturer in Statistics:** Any branch of Statistics.

Lecturer in Mathematics: Algebraic-number theory/ring theory/group theory/lie groups/any branch of analysis/topology/linear programming or any other.

NOTE: Those who have already applied for the following posts need not apply again :

1. Reader in Punjabi—Advt. No. 8/77.
2. Reader in Punjabi Language, Literature & Culture—Advt. No. 23/77.
3. Lecturer in Hindi—Advt.No. 378.

Mohinder Singh Randhawa
REGISTRAR

BANARAS HINDU UNIVERSITY
(Advertisement No. 2/1978-79)

APPLICATIONS are invited for the undermentioned posts. The benefit of Provident Fund/Pension, Dearness Allowance, House Rent Allowance and City Compensatory Allowance are admissible according to University rules. The retirement age of the University employees is 60 years. The appointment will be made on two years probation on all permanent posts. Higher starting salary within the grade

is admissible to specially qualified and experienced candidates.

Applications will be entertained on the prescribed form duly supported with a Bank Draft or Crossed Indian Postal Orders for Rs. 7.50 in favour of the Registrar, Banaras Hindu University towards the application fee. Application forms will be supplied free of cost by the Registrar (Selection Committee Section), Banaras Hindu University, Varanasi-221005 on receipt of Re. 0.25 paise stamped self-addressed envelope. Candidates called for interview for these posts will be paid actual Railway Fare by the Second Class plus reservation charges for sleeper, if paid, and/or actual Bus Fare from the present residence both ways by the shortest route as per University rules. No other expenses will be paid.

Application for each post be sent separately alongwith attested copies of certificates in support of the qualifications and experience mentioned in the application and be addressed to the Registrar (Selection Committee Section), Banaras Hindu University, Varanasi-221005.

Incomplete application in any respect will not be entertained for consideration.

Those who are in service should apply through proper channel. M.O. or cheque will not be accepted towards the application fee.

The last date for receipt of applications is July 6, 1978.

1. Professional Junior (One) (Central Library, B.H.U.)
Grade : Rs. 700-1300.

Qualifications Essential: (1) First/Second Class B.A./B.Sc./B.Com. degree plus First or Second Class M.Lib.Sc. degree OR First/Second Class M.A./M.Sc./M.Com. degree and First or Second Class B.Lib.Sc. or one year Diploma in Library Science. **Desirable:** (1) Experience of having worked in a large library. (2) Proficiency in Colon Classification: and (3) Knowledge and experience of library automation.

COMPUTER CENTRE (INSTITUTE OF TECHNOLOGY)

2. System Manager (One)
3. System Engineer (One)
Grade: Rs. 1100-1600.

Essential Qualifications: (1) M.E./M.Tech. with 5 years' experience or P.G. Diploma with 7 years' experience or Master Degree/B.E./B.Tech. with 8 years experience or Science Graduate with 10 years' experience in Computer work.

4. Maintenance Engineer (Senior) (One)
Grade: 1100-1600.

Essential Qualifications: (1) M.E./M.Tech. with 5 years experience or P.G. Diploma or Master Degree/B.E./B.Tech. with 6 years experience or Science Graduate with 10 years' experience in Computer work.

5. Maintenance Engineer (Junior) (Two)
Grade: Rs. 700-1300.

Essential Qualifications: (1) Master level degree in Computer Science with 3 years experience in Computer work or Master Degree/B.E./B.Tech. with 4 years experience.

6. Programmers (Two) (Plus 1 for extra shift)
Grade: Rs. 700-1300

Essential Qualifications: (1) Master's/Bachelor's level degree in software engineering with 5 years experience or Master's level degree in applications area.

CENTRAL HINDU BOY'S SCHOOL

7. Principal
Grade: Rs. 1100-50-1600.

Qualifications Essential: (1) A First or Second Class Master's Degree or an equivalent equalification. (2) Degree or Diploma in Teaching. (3) Three to five years experience in Educational Administration including teaching experience preferably in a Public School, Intermediate College or any Secondary School or in a Teacher's Training Institution OR about 6 years teaching experience in recognised High/Higher Secondary Schools or Public Schools.

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The Journal is mailed on 1st & 16th of every month.

**JAWAHARLAL NEHRU
UNIVERSITY**

Advt. No. Aca. III/6/78

**Announcement of Faculty Positions
at the Centre of Post Graduate
Studies, Imphal.**

The Centre of Post-Graduate Studies, Imphal of the University has openings for faculty positions at the level of Professor/Senior Fellow, Associate Professor/Fellow and Assistant Professor/Associate Fellow in the Life Sciences Division in the following areas of specialization:

1. Plant Physiology
2. Plant Pathology
3. Genetics
4. Ecology
5. Fishery
6. Entomology

Position & Scale of Pay

Professor/Senior Fellow: Rs. 1500-60-1800-100-2000-125/2-2500.

Associate Professor/Fellow: Rs. 1200-50-1300-60-1900.

Assistant Professor/Associate Fellow Rs. 700-40-1100-50-1600.

(Plus usual allowances as admissible to the members of the staff in Imphal.)

ESSENTIAL QUALIFICATIONS

Professor/Senior Fellow

Consistently good academic record with at least a high 2nd class Master's degree in the relevant discipline or an equivalent qualification from an Indian/Foreign University. A doctor's degree or published work of an equally high standard; and about ten year's experience of teaching and/or research.

Associate Professor/Fellow

Consistently good academic record with at least a high 2nd class Master's degree in the relevant discipline or its equivalent qualification from an Indian/Foreign University. A doctor's degree or published work of an equally high standard; and about five years' experience of teaching and/or research.

Assistant Professor

Consistently good academic record with at least a high 2nd class Master's degree in the relevant discipline or its equivalent qualification from an Indian/Foreign University; and a doctor's degree or published work of an equally high standard.

Associate Fellow

Consistently good academic record with at least a high 2nd class Master's degree in the relevant discipline or its equivalent qualification from an Indian/Foreign University; and some teaching and/or research experience.

Relaxation in any of the qualifications may be made (a) in favour of persons of eminence or of high academic professional distinction, and (b) in exceptional cases where adequately qualified persons are not available but are otherwise found suitable for the respective positions. It will also be open to the University to consider the names of suitable candidates who may not have applied.

The selected candidates will be expected to participate in the teaching and research programmes in the concerned disciplines in other Division of the Centre as well as in the programmes

Normally appointment of Fellows and Associate Fellows is made on contract basis for a period ranging from one to three years.

Benefits of C.P. Fund-cum-Gratuity G.P. Fund-cum-pension-Gratuity are available as per University rules.

Persons already in employment should route their application through proper channel.

Due consideration will be given to candidates belonging to SC/ST at the level of Assistant Professor/Associate Fellow.

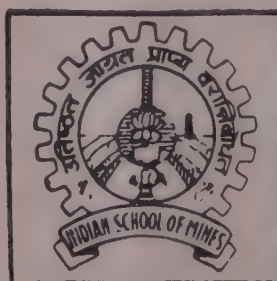
Note: Candidates who had applied in response to Centre's earlier Advertisement need not apply again.

Second class (mail) rail fare (both ways) will be paid to candidates invited to appear for interview from outstation by the shortest route subject to the production of rail receipt.

Applications, separate for each post, on the prescribed form, obtainable free of cost from the University by sending

a self-addressed and stamped envelope of 23 cm x 10 cm. size to the Deputy Registrar (Academic), Jawaharlal Nehru University, New Mehrauli Road, New Delhi-110057 should reach him latest by 30th June, 1978.

Candidates from abroad, applying for faculty positions, may apply on plain paper, (but their applications should reach the University by the last date) furnishing all the relevant information such as their names; date and place of birth; marital status; nationality; state of domicile; postal and permanent addresses; father's name and address; academic and professional attainments; full details of (a) publications, and (b) research projects undertaken; language (s) known; details of visits to foreign countries; and the names and addresses of at least two persons well acquainted with the candidates professional work who should also be requested by the candidate to forward to the Deputy Registrar (Academic) confidential report concerning the candidates.



**Indian
school of
Mines**

No. 615028/78

**Direct Admission-1978
For Rank Holders Etc.**

May 29, 1978

A limited number of seats in the first year of the 5-year Integrated Programme leading to the degrees of B.Tech in (1) Mining Engineering, (2) Petroleum Engineering, (3) Mining Machinery and of Master of Science in (1) Applied Geology and Applied Geophysics at the Indian School of Mines, for the session 1978-79, are reserved for rank-holders in the examinations for Pre-University/Indian School Certificate/Higher Secondary (or equivalent) with Chemistry, Mathematics, Physics and English conducted by recognised Universities/Boards and results announced in the month of August 1977 or afterwards.

2. Candidates who have secured at least 60 per cent marks in each of the subjects of Physics, Chemistry and Mathematics and are within the first ten ranks in the examination mentioned above, are eligible to apply for admission under this category. However, Scheduled Caste/Scheduled Tribe candidates who have obtained not less than 50 per cent marks (in aggregate) in Physics, Chemistry and Mathematics, may also apply for admission.

Candidates who have already appeared for the ISM Entrance Examination conducted this year may also apply for seats under this category provided they satisfy the conditions mentioned above.

3. Only such candidates as were born on or after 1st October, 1957 are eligible for admission under this category. The upper age limit is relaxable by three years in the case of candidates belonging to Scheduled Castes and Scheduled Tribes.

4. Detailed instructions and Application Form can be had from the Registrar, Indian School of Mines, Dhanbad-826004, by sending a Crossed Postal Order for Rs 5/- only.

Applications in the prescribed form, complete in all respects including rank-holder certificate and marks-sheet should reach the Registrar, Indian School of Mines, Dhanbad by 7th Jtly, 1978.

**S. P. VARMA
REGISTRAR**

**SHREEMATI NATHIBAI DAMODAR
THACKERSEY
WOMEN'S UNIVERSITY
1, Nathibai Thackersey Road,
Bombay-400020**

Applications are invited on prescribed forms (8 copies) available from the University Office, on payment of Rs. 5 (by M.O. or Cash) for the post of **PRINCIPAL, Sir Vithaldas Thackersey College of Home Science, Bombay-400054** so as to reach the undersigned not later than **June 30, 1978.**

QUALIFICATIONS

(a) A doctor's degree or research work of an equally high standard, preferably in one of the areas of Home Science or one of the subjects under Pure Science or Social Science related to Home Science.

(b) A consistently good academic record with a B+ at the Master's level or equivalent degree of a foreign University, preferably in Home Science or in the areas mentioned above.

(c) About 10 years experience of teaching and/or research at a College or a University Department preferably in Home Science. Experience of guiding research at doctoral level and organizing extension work will be considered added qualifications.

(d) Adequate administrative experience.

SALARY SCALE

Senior Scale: Rs. 1500-60-1800-100-2000-125/2-2500+admissible allowances (App. total on initial salary Rs. 1800).

Junior Scale Rs. 1200-50-1300-60-1900+admissible allowances. (App. total on initial salary Rs. 1500).

Scale will be decided depending on qualifications and experience.

Note

(1) Qualifications may be recommended for being relaxed in exceptional cases.

(2) Residential accommodation available.

(3) Other things being equal, preference will be given to candidates belonging to scheduled castes and/or scheduled tribes and/or any other Backward Communities notified by the Government.

(4) Proficiency in English and Marathi/Gujarati essential.

(5) Higher starting salary may be considered in exceptional cases on recommendation of the Selection Committee.

(Smt.) Kamalini H. Bhansali
REGISTRAR

ALIGARH MUSLIM UNIVERSITY

Advertisement No. 9/78-79

Applications, on the prescribed forms, are invited for the following posts:

1. Casualty Medical Officer, Scale Rs. 700-1300 plus allowances.

Qualifications

M.B.B.S. Postgraduate Degree or

Diploma in a Clinical subject. Three years experience as Resident or Registrar in a Teaching Hospital.

Desirable

Experience of Casualty work.

2. Anaesthetist, Post-Partum Programme Scheme—Department of Obst. and Gynaecology 'Till the duration of the Scheme' Scale Rs. 700-40-1100-50-1600 plus allowances.

Qualifications

MBBS from a recognised Medical College with one year's experience as House Surgeon preferably in Anaesthesiology Department.

Desirable

Postgraduate Diploma in Anaesthesia (D.A.)

3. Librarian, Z.H. Engineering College, Scale Rs. 700-1300 plus allowances.

Qualifications

First or second class B.A./B.Sc./B.Com. Degree plus a first or second class M.Lib.Sc. Degree or first or second class M.A./M.Sc./M.Com. Degree and a first or second class B.Lib.Sc. or a Diploma in Library Science. Five years experience of a recognised Library preferably of a technical Library in a responsible capacity.

Desirable

Knowledge of documentation work and administrative routines.

4. Sisters/Ward Masters (about 14 posts), Medical College Hospital, Scale Rs. 455-15-560-EB-20-700 plus allowances.

Qualifications

Registered Nurse and Midwife, Ward Sister Course of 3 months after three years experience as Staff Nurse or B.Sc. Nursing.

5. Radiotherapist, Medical College Hospital, Scale Rs. 425-700 plus allowances.

Qualifications

B.Sc. or equivalent. Passed X-ray Technician's Training in Radiography. Experience in Radiotherapy work as a Technician, for atleast 5 years in a teaching institution.

Note

Qualifications are relaxable by the Selection Committee.

6. Statistical Assistant, Scale Rs. 425-700 plus allowances.

Qualifications

B.A., B.Sc., B.Com. Degree with sufficient experience of statistical work. Preference will be given to those who have passed the B.Sc. examination with Statistics or B.Sc. with Diploma in Statistics with statistical training.

7. Primary Teacher, Scale Rs. 330-10-350-EB-15 560 plus allowances. Abdullah Nursery School.

Qualifications

1. Higher Secondary Trained, Female Teacher.

2. At least 5 years experience of teaching in an English Medium School.

Desirable

Ability to organise dramatic activities and games.

8. Primary Teacher, Abdullah Nursery School, Scale Rs. 330-10-350-EB-15-560 plus allowances.

Qualifications

1. Higher Secondary trained. Female Teacher with good personality.

2. Three years teaching experience of young children in an English medium.

Desirable

Should also have experience of preparing visual and teaching aids for children. Should be well versed with modern techniques of teaching.

9. Trained Graduate Teacher, City High School, Scale Rs. 440-20-500-EB-25-700-EB-25-750 plus allowances.

Qualifications

Atleast 2nd class Bachelor's Degree with Physics, Chemistry and Mathematics. University Degree/Diploma in Teaching and/or Adequate experience of teaching in College/Secondary Classes.

Desirable

Ability to teach through Urdu medium. Master's Degree in Mathematics.

10. Trained Graduate Teacher (Tailoring) City High School, Scale Rs. 440-20-500-EB-25-700-EB-25-750 plus allowances.

Qualifications

1. High School.

2. Diploma in Tailoring from a recognised institution.

3. Teaching through Urdu medium.

Desirable

Teaching experience in Secondary School.

11. Primary Teacher, City Branch School, Scale Rs. 330-10-380-EB-12-500-EB-15-560 plus allowances.

Qualifications

1. High School.

2. Certificate in Physical Education from a recognised school of physical Education.

3. Adequate knowledge of Urdu.

Desirable

1. Teaching experience.

2. Ability to coach students in any game.

Prescribed application forms and instructions may be had from the Deputy Registrar (Executive) either personally or by sending a self-addressed envelope of 23x10 cm. Last date for receipt of applications is **27th June 1978.** Incomplete applications and those received late may not be considered.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T.A. equal to one single Second Class Railway fare only.

**Jamalur Rahman
REGISTRAR**

University lews

THE UNIVERSITY
OF DELHI
LIBRARY
1978-79

A CHRONICLE OF HIGHER EDUCATION & RESEARCH JULY 1, 1978 80 PAISE



Dr. M. S. Randhawa, former Vice-Chancellor of Punjab Agricultural University, presenting the Report of the Review Committee on Agricultural Universities to Shri Surjit Singh Barnala, Minister for Agriculture and Irrigation in New Delhi.

BERHAMPUR UNIVERSITY
BHANJA BIHAR, BERHAMPUR-760 007.
DIST: GANJAM, ORISSA

No. 8237/ADMN/BU/'78.

DATED, THE 13th June, 1978

Advertisement

Applications are invited in the prescribed form for the following Teaching posts in the University Service on or before the 10th July, 1978.

Sl. No.	Subject	Name of the Post	No. of Vacancies	Field of specialisation
(1)	Zoology	Reader	1	—
(2)	Economics	Professor	1	Regional Economics and Planning.
(3)	English	Reader	1	—
(4)	Commerce	Professor	1	Preferably in Business Administration.
(5)	Marine Sciences	Professor	1	Marine Biology
		Reader	2	{ One in Physical-Oceanography.
				{ One in Marine-Fisheries.
		Lecturer	3	{ One in Marine-Chemistry.
				{ One in Marine-Geology.
				{ One in Marine-Botany.

(Senior experienced Retired persons may also apply for the posts under Marine Science Department. Teachers for Marine Science may be on contract or on deputation basis as the University may decide later.)

Scales of Pay :

Professor	: Rs. 1500-60-1800-100-2000-125/2-2500/-
Reader	: Rs. 1200-50-1300-60-1900/-
Lecturer	: Rs. 700-40-1100-50-1600/-

All posts carry usual allowances admissible under the rules in force in the University from time to time.

Qualification & Experience

Professor

- The Professor shall be a scholar of eminence
- possess good academic record with a First or High Second Class Master's degree in the subject
- have a Doctorate degree or published work of equivalent standard
- have independent published research work of high standard in addition to the published work as in (iii) above; and
- be engaged in active research and have experience in guiding research for a considerable period as evidenced by successful supervision of doctoral research.
- be a teacher for ten years out of which at least seven years should have been spent in regular teaching in Post-Graduate/Honours classes.

Reader

- The Reader shall have a good academic record with a First or High Second Class Master's degree in the subject.
- A Doctorate degree ;

- Independent published research work (in addition to the published work mentioned in (ii) above.
- teaching and research experience for eight years out of which at least five years should have been spent in regular teaching in Post-Graduate/Honours Classes. Capacity to guide research shall be regarded as an additional qualification.

Lecturer

- A Doctor's degree or published work of an equally high standard.
- Consistently good academic record with First or High Second Class (B+ or 55%) Master's degree in a relevant subject or an equivalent degree of a foreign university; and
- teaching experience will be considered as additional qualification.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (ii) above

Provided further that if a candidate possessing a doctorate degree or equivalent published work is not available or is not considered suitable, a person possessing a consistently good academic record (due weightage being given to M. Phil or equivalent degree or research work of quality) may be appointed on the condition that he will have to

obtain a Doctor's degree or give evidence of published work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils those requirements.

Seven copies of the prescribed application forms will be supplied to the candidates from the office of the undersigned on payment of Rs 10/- in person or by bank draft drawn on the State Bank of India in favour of the Registrar, Berhampur University, Bhanja Bihar, Berhampur-760007, District: Ganjam, Orissa along with a self addressed envelope measuring 22x10 cms affixed with postage stamps worth of Rs. 0.85.

The applications duly filled in along with attested true copy of certificates, testimonials and publications, etc should reach the undersigned on or before the date specified above. Applications received after due date will not be entertained.

Candidates who are in service should apply through proper channel.

Persons in Government Service selected for appointment shall be allowed leave salary and pension contribution for one year only if they wish to retain their lien under Government.

The prescribed period of experience for the post of Professor and Reader will be calculated up to the last date fixed for the receipt of application.

Candidates may be required to appear before the selection committee at their own expenses. Selected candidates will be required to join the post within one month from the date of issue of the appointment order.

The University reserves the right to fill up or not to fill up the posts advertised and/or to call only selected candidates for interview.

M. Mahapatra
REGISTRAR

UNIVERSITY OF JAMMU
NOTIFICATION

The Departments of Physics, Geology, Mathematics, History & Economics of the University of Jammu, will be operating the scheme of Teacher Fellowships sponsored by the University Grants Commission under the Faculty Improvement Programme for college teachers teaching under-graduate classes to work towards an M. Phil or a Ph.D. degree.

Full details and the prescribed application form can be had free of cost from the University Office Jammu, by sending a self addressed envelope along-with Postal stamps worth 40 paise or personally on any working day.

Applications completed in all respects through proper channel must reach the Head of the University Department concerned not later than July 15, 1978. Applications received late or incomplete in any respect will not be entertained.

K. K. Gupta
REGISTRAR

UNIVERSITY NEWS

Vol. XVI JULY 1
No. 13 1978

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*Opinions expressed in the articles
and reviews are individual and do
not necessarily reflect the policies
of the Association*

Hony. Editor: ANJNI KUMAR

Some Facets of Faculty Development

Anand P. Srivastava*

To be a teacher in life has its own advantages and disadvantages, but it is certain that the person is comparatively unbridled. True, a teacher is to learn at least twice, if not more, yet there is no control on her or him, except the instinct of self analysis and introspection. Often, the vanity in a teacher tempts one to forget the possibility of remaining an ignorant. Confucius warned that the scholarship which consists the memorisation of facts does not qualify one to be a teacher. Oscar Wilde made a sweeping charge that everybody who is incapable of learnings takes to teaching. The experiences of Bernard Shaw made him to make a damaging comment, "He who can, does. He who cannot, teaches". Realising these phenomena and also other facts (viz., need for continuous learning by a teacher, that too through self analysis and personal efforts, minus red tape control) reformers of modern education have come out with the concept of "Faculty Development". A lot of useful and practical global literature has appeared on this area during the last thirty years. The consequence is that alert teachers now divide equally their time between teaching and learning activities.

Higher education in India, through various reports and studies so far conducted, has mostly emphasised some structural changes. The earlier pattern was High School, Intermediate, Bachelor's degree, Master's degree and lastly the Ph.D. Programme. Then came the pattern of Higher Secondary, three years degree programme, Master's degree and then the Ph. D. Suddenly, we developed the famous formula of 10+2+3, Master's + M.Phil. then Ph.D. The structure of 8+4+2 plus other appears to be coming up. While we are busy in these not much productive exercises, the western world examined some more important relevant factors like, how to continue to develop the faculty; how to improve modes and methods of instruction so as to make them more effective; how to improve the learning needs of students; and how to develop abilities of language, analysis and synthesis in a student. We, in India forgot the golden objective of teaching—the student should get along at the earliest without his

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teacher. We performed the rituals like rearranging courses in different patterns. Letter grades discarded numerical marks. Terms got replaced by semesters. But teaching method remained almost the same. These issues practically pushed aside the kernel issues viz., ways for better teaching and methods of better learning; cultivation of sound reading ability and habit, and necessary competence in analysis and synthesis leading to lifelong self education.

It is only recently that we started some minor elements of faculty development. Most of our university faculty is recruited when in their twenties and are retired only in early sixties. It is necessary that university teachers who serve for about 35 years continue to : improve in competence, enhance their talents, widen their interests and periodically undergo self and objective evaluation of their academic and personal growth. Even the university teachers in India support intense criticism of irrelevant courses taught, primitive ways and uninspired modes of teaching conducted, mostly through passive lectures. Our teachers are aware that the citizens, students, administrators, and politicians are not proud of their roles and performance. The subject, how to be a better teacher, also has rich literature available these days. But most of our university teachers having grown in their subject of specialisation are unfamiliar with such a general topography of higher educational landscape and have not formulated systematically their theories of teaching. Nor have they properly evaluated over years the degrees of effectiveness of their own teaching routines. The result is that the classroom has become a teacher's castle, and no one can sit in judgement over a teacher's teaching work. It is still a prickly subject.

As a teacher grows in age certain obvious characteristics set into his personality. The characteristics of increased preoccupation with the inner self and decreased investment in others becomes common. Such an attitude is not conducive for a teacher and hence, it has to be resisted in an organised manner. Research grants, participation in professional conferences, study and sabbatical leaves do help in the growth of a teacher but these programmes are not enough for the required professional growth of a university teacher in his overall balance sheet. Unless a university teacher gets a challenge, mostly through student evaluations and ratings of his teaching effectiveness, one is not likely to make much efforts to gather energy for development. Secondly, urge for self-examination aimed at 'self-insight' is the track for the development of a teacher. Hence, a teacher should encourage students to evaluate his teaching each year. This will open the way for improving.

The 'how' of the faculty development must include extension of knowledge in a teacher, both umbral and penumbral. Cross-fertilisation of disciplines is on increase in Indian universities but real interdisciplinary courses have yet to get established. Our universities need to regularly organise lecture series and discussion groups to analyse current national educa-

tional issues and developments in teaching methods achieved abroad. Today, the UGC, Universities and educationists are trading with numerous alround ideas, which fail to reach a common teacher, the most concerned actor. Lack of dissemination in organised manner results in non-implmentation of good ideas and programmes. A brief newsletter, not a research journal, covering discussions on faculty development and innovative teaching experiences of some teachers should be published regularly. Reading, thinking, writing and discussions in groups on areas of teaching and learning methods will benefit our teachers all over the country in their development. Faculty development should no more be limited to an individual's isolated efforts, in earning an additional degree, practically an end in itself. The common excuse of non-availability of time need not be made by a faculty for making efforts for self-development. The other area is that, we the teachers need to continue to develop our teaching skills and methods individually. Regular workshops on better teaching methods in general, and on teaching in various sectors of knowledge in particular, are long overdue. The University Grants Commission needs to help organise such workshops at the earliest. There are sound programmes on 'Effective Teaching' and 'Effective Listening' marketed abroad, and are also inexpensive, that the UGC may buy and use for teachers under Faculty Development Programme. Another facet of faculty development should cover techniques to make teachers sensitive to the dynamics of a classroom. Such techniques have been developed by the Harvard University and many others. Lessons on student needs, rates of growth, possible deficiencies and attitudes go a long way in developing a faculty. Learning abilities of students, more than half of the story, must be fully studied and duly provided for into any instructional development programme. Our faculty should get regular feedback on one's teaching behaviour, in relation to students learning details, for which several devices have been evolved to work as a mirror for a teacher. Numerous tables are in use to judge student reaction to teaching and to the courses taught. Let us practice such tables in our universities. Our students have agitated many times demanding, "Teach us well". There is at the present neither the accounting nor the cost accounting of the class-room teaching. Customers of higher education certainly mind being cheated and under supplied. Spurious teaching must go. It is one of the major reasons for student revolt in India.

We need to forget for sometime the urge for structural changes and devote our energy in launching a movement for faculty development, by improving techniques for better teaching, by inventing better learning methods, by cultivating a strong reading ability and habit in our students, and above all by putting our end product on the paths of continued self-education. These are the most important and relevant factors in modern higher education, and dissemination programmes, through a newsletter by the UGC, on these areas need to be conducted for better progress. □

Role of University in Population Education

H. R. Arakeri*

Although much has been written for and against pronouncement made by Malthus in the year 1798, it is becoming clear that the resources available on the world are finite and infinite growth of population will result in disaster some time or the other. The world population reached one billion mark by 1830. It took many many years to reach this level. It took about 100 years i.e. by 1930 to reach the 2nd billion mark. The 3rd billion was added in the next 30 years, i.e., by 1960. The world population has reached 4th billion mark in 1975. It took only about 15 years to add the 4th billion. It is expected to reach the 5th billion mark by 1986 and 6th billion mark by 1995. Finally, the world population may stabilise at 14 billion.

Thinking men world over are increasingly becoming aware of the dangers of unchecked growth of population and increasing attention is being bestowed on various factors of population. The rate of growth of population has come down to a considerable extent in many of the developed countries. The levels that are expected to be reached by different countries by 2000 A.D. are:

Country	Present level (in millions)	Level by 2000 AD (in millions)
Asia	2100	3750
Africa	354	818
South America	195	652
Europe	466	566
North America	327	333
U.S.S.R.	225	330
Oceania	20	23

It is evident that the population which is about 2649 million at present in all the developing countries put together, will reach the level of 5220 million by 2000 A.D. This means it will be doubled while as the increase will be from the present level of 1058 million to 1251 million in the developed countries. In North America, i.e., U.S.A. and Canada put together, the increase will be only 6 million as against the expected increase of 6 million in less than every 6 months in India. While European countries will add only 100 million, Asia, South America and Africa will add 1650, 457 and 464 millions respectively. Japan is striving hard to achieve zero population

growth in another 75 years, by which time i.e., by 2050 A.D., it is expected to have a population of 145 million.

The picture of population growth in India is much different from many other countries in the world. The growth was slow until 1950. After independence although the birth rate has not come down much, the death rate has declined considerably as a result of improved public health standards. Hence there has been tremendous increase in population and if the same trend continues, second India would be added before the close of the century.

Mr. McNamara, President of the World Bank has said, "It is perhaps the most tragic irony of our times that better programmes of public health have unleashed the population explosion in the developing world". These measures have no doubt resulted in less demographic wastage, and needless loss of life. One of the reasons why in India parents prefer to have larger number of children is because of low survival percentage. In earlier years it was shown that it was necessary to bear on the average 6.3 children in order to have 93 per cent certainty that at least one son would survive to the father's 65th birthday. The picture has changed now. The survival rate is much better. It is, therefore, not very necessary to bear large number of children to ensure survival of at least one son. This has to be made known to common people.

If the present trend continues, it is expected that the population in the country may reach the level of 1000 million and if the same trend continues further, 3rd and 4th India would be added within a few decades. The people should be educated on the significance of such tremendous increase in population. To feed the increasing population at the present level of nutrition, the production of food will have to be doubled in the next 20-25 years. To achieve such a level of production, the per annum rate of increase will have to be doubled. The growth rate has been of the order of about only 2-3 per cent per annum. But it will have to be doubled. It means, it will have to be at least 5-6 per cent per annum to achieve the level necessary to meet the needs. The development efforts will have to be considerably intensified just to maintain the present level of living. If the living pattern has to be improved, the rate of increase will have to be much higher, signifying heavier investments and harder work.

It has been estimated by UNESCO and shown that to ensure cent percent literacy in the developing world there will be need for 7.5 million new teachers, it will amount to 5 lakh new teachers every year or 1300 new teachers per day. Since it will not be possible to make such a large number of teachers available, there will be more number of illiterate persons than at present.

The unchecked increase in population would create tremendous pressure on various services and supplies. Although it may become possible to cope with the needs as far as food, clothing etc. are concerned at

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the present standards, it would become increasingly difficult to cope with other service like education, health and water supply. It is, therefore necessary to educate the people on the implications of various population factors.

Another important implication is in regard to migration of rural population to urban centres and its tremendous pressure on urban life. It may not be possible for the urban centres to bear such a pressure. The answer, therefore, would lie in containing the increased population in rural areas there itself, which would mean creating increased opportunities for employment. Either way, the problem is going to be gigantic and therefore the need for measures to check the population growth and make the people realise about the implications.

Population education is not just the education for family planning. But it is the process which helps people to understand the implications of population factors for the well-being of the individual, the family and society. The population factors include various population characteristics like size, composition and distribution. Population education also concerns with the characteristics like basic processes of births, deaths and migration. Population education will have to be all pervasive. It has to start right from the earliest age and continue much beyond the production age. Thus, it is to clear that the educational institutions, starting from primary to university level, will have to play the necessary role in providing opportunities to the schoolgoing and college going students to know about the population factors. The universities will have to involve themselves in population education with various objectives.

As indicated in the F.A.O. documents, "The objective will have to equip the individual with knowledge, skill and understanding that enable him to (a) assess population situations and trends in terms of problems they may pose to himself, his family and community, and society in general; and (b) decide on and take effective courses of action that can help solve these population-related problems". It is the university level which has to provide these opportunities in the first instance. Because it is the university-trained men who will be working as teachers, researchers, and policy-makers at various levels. It is necessary that the university education includes study of population problem. It is not only agricultural universities which should be involved in this process of population education, but also all other universities.

The agricultural universities, however, have increased responsibility for the reason that in developing countries the proportion of rural population is much larger than the urban population. The problems of population education for urban people are much different from those of rural population. The methods adopted in urban areas will not work in rural areas. It is the men and women trained in agricultural universities who will work in the organisations concerned with rural development. The men working in such organisations will be in much closer contact with rural

population than others. It is therefore very necessary to ensure that the population education and rural development go together. It behoves the agricultural universities to provide opportunities to their students at undergraduate as well as postgraduate levels. In addition, systematic research to understand the impact of population factors on various other services and supply arrangements need to be initiated. Similarly, opportunities will have to be provided to the extension workers to be equipped with better knowledge about population factors, so that they would be in a position to educate the adults about the implications of the problem. Population education can be provided in the agricultural universities in two ways. One is to provide population education input in all the relevant courses like, Agricultural Economics, Agronomy, Horticulture and others, and the other way is to prescribe special compulsory courses on population education. It does not matter how it is done. The most important consideration is the extent to which all the teachers in the university are convinced about the need for such education. It is only then the aims and objectives will be achieved.

The Food and Agriculture Organisation of the United Nations with the support from the United Nations Fund for Population Activities has been organising workshops and seminars at various levels. One of the seminars that was organised in 1975 from 19-28 November in Sri Lanka discussed in depth the subject of population education as concerned with agricultural and rural development organisations and made a number of recommendations. As a follow up measure, a seminar was organised in Philippines in 1977, which dealt with the specific subject of the role of agricultural colleges and universities and have come out with their recommendations worthy of attention. □

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Higher Education in Bihar

Gorelal Yadava

Education plays a very important role in economic development. Economic development does not depend on the availability of material resources of the economy alone. It also depends on the quality of human resources. Utilization of material resources is a crucial factor in determining the extent and pace of economic development and this utilization is a function of the development of human resources. Material Planning creates opportunities for economic growth but it is the response of the human factor that determines the utilization of these opportunities. This response of the factor is primarily a function of education and in the entire process of education, university education occupies a distinct place. In this sense university education possesses seed value. The quality of education in a society depends primarily on the quality of university education. The higher the quality of university education the better would be the secondary school teachers. Similarly, the quality of elementary school teachers would also depend mostly on the type of education imparted to them at the secondary level. The higher education, therefore assumes a very important place in any scheme of educational planning particularly in developing economics.

It is, however, distressing to note that the university education in Bihar has been getting only a low percentage of the total outlay on education in the State but that percentage has also been falling since the Third Plan. During the Third Plan the outlay on university education was 23 per cent of the total outlay on education which came down to 13 per cent during the Fourth Five Year Plan and 8 per cent during the Fifth Plan.

However, the achievements in terms of enrolment have been impressive. The enrolment for general higher education was 21,897 in 1950-51 which went up to 40,026, by 1955-56, 73,910 by 1960-61, 98,933 by 1965-66, 1,75,000 by 1968-69 and 260,000 by 1973-74. It is estimated that nearly 345,000 students would be enrolled for higher education in Bihar by 1978-79. To accommodate them the number of institutions of higher education went up from 31 to 275 by 1973-74. It shows that while the enrolments increased by eleven times during 1950-74, the institutions increased by only nine times during the same period. It means that the teacher: pupil ratio has gradually worsened.

The emphasis during the Fifth Plan period was more on consolidation and qualitative improvement rather than on development. But it has been felt that unless the stage plus 2 of the national pattern of education is sufficiently vocationalised the above objective would not be realised. No concrete step has been indicated as yet for vocationalising the

plus 2 stage and now after the Janata Party has come to power, the issue is being debated in the concerned quarters and a final decision is expected soon. In respect of the decision of the Government about the plus two stage the flood of admission-seekers in colleges, universities is bound to dilute the quality of higher education in the State unless corrective measures are taken well in advance. Before suggesting corrective measures, identification of problem would be necessary.

First of all, it is necessary to estimate the number of students who would be undertaking higher education in 10 years' time in the State. The rate of growth in enrolment has been 11.5 per cent per annum during the period 1968-69—1972-73. Taking into account the gradually increasing hunger for higher education on the one hand and the fast increasing base on the other, the per annum increase in enrolment may accent. On the basis of 15 per cent increase per annum the enrolment by the year 1983-84 would be 693,918 whereas on the basis of 20 per cent, it would be 858,470. On the basis of 1973-74 college pupil ratio, that 858,470 enrolment would need 908 institutions of higher education. The State Government will have to plan for nearly 600 institutions to cope with the problem of expected admission-seekers.

Some of the affiliated colleges are nothing but commercial establishments set up by the rich of the locality to exploit the teachers and the students together and just to earn profit. In the appointment of teachers and principals for such colleges, academic result, past experience or merit relevant is given little consideration. When quality is thrown to the winds at the time of the appointment of teachers and principals by the governing bodies of the affiliated colleges, how can we hope of qualitative improvement in higher education in the State? The method of appointment of the teachers in the affiliated colleges needs drastic change and this is possible only when the powers of the governing body in the academic matters are cut to the minimum.

Most of the affiliated colleges are understaffed and some of them have only one teacher in each department who is supposed to take all general lectures and tutorial lectures of all the four classes daily (1st year to 4th year) and in this process, several classes go unattended. In several colleges, no tutorial and practical classes are held at all due to the shortage of both the teachers and the rooms. In most of the new colleges where science teaching is done, even elementary scientific instruments are not to be found.

The quality of work performed depends very
(Continued on page 1038)

Report of the Review Committee on Agricultural Universities

The Indian Council of Agricultural Research had set up in January 1977 a Review Committee under the Chairmanship of Dr. M S Randhawa, former Vice-Chancellor of the Punjab Agricultural University to review the growth and development of agricultural universities in India. The terms of reference of the Committee were :

“To assess how far agricultural universities are meeting the needs of trained manpower at different levels and producing non-elite graduates with motivation for self-employment in agriculture, with competence to identify and resolve practical problems and with an attitude to demonstrate to farmers even by working on farms. In this context, the Committee would assess the quality of educational programmes, adequacy of opportunities for work experience, internal efficiency and relevance of research programmes of the university, particular attention being given to orientation of home science education to suit Indian conditions more particularly rural India.”

The other members of the Committee were : (1) Dr. D. S. Gorhe, Bhartiya Agro-Industries Corporation, (2) Dr. D. N. Sharma, Ex-Vice-Chancellor, Patna University, (3) Late Smt. Lilavati Munshi, Bhartiya Vidya Bhavan, (4) Smt. Lakshmi Mazumdar, National Commissioner, Bharat Scouts and Guides, (5) Dr. M. R. Dhanda, Retired Director, Commonwealth Bureau of Animal Health, (6) Late Dr. N. K. Pannikar, Vice-Chancellor Cochin University, (7) Dr. J. B. Chitamber, Ex-Member University Grants Commission and Principal, Allahabad Agricultural Institute, (8) Prof. A. Abraham, Retired Professor of Genetics and Plant Breeding and Head of the Department of Botany, Kerala

University, (9) Major General O. P. Dutta (Retd.), (10) Shri Sidheshwar Prasad Singh, Ex-President, Varansi Zila Parishad and Member ICAR Society and (11) Dr. O. P. Gautam, Deputy Director-General (Education), Indian Council of Agricultural Research, New Delhi (Member-Secretary).

The Committee visited eighteen of the twenty-one agricultural universities and held wide-ranging consultations with officers, faculty members and students of agricultural universities, concerned officials of State Governments and non-officials including farmers. The Committee submitted its report to the Minister for Agriculture and Irrigation, Shri Surjit Singh Barnala, on the 7th June, 1978.

The Committee's overall assessment is that agricultural universities together have made a tremendous impact on agricultural production during the short span of their existence. They have achieved this through development of new technology, through relevant research programmes, effective demonstration of usable research results on cultivators' fields and by training the much needed scientific and technical manpower required for India's fast developing agriculture. The Committee, however, stated that there is high degree of variability amongst agricultural universities with regard to achievements and output, quality of leadership and competence of faculty, degree of institutional development and maturity, magnitude of financial support from the State Governments, extent of transfer of research responsibilities to the university, quality and relevance of teaching and research programmes, operational efficiency and commitment to public service.

Quality of leadership and degree of commitment and support from the State Governments have been identified as the two main factors responsible for this variability in growth, performance and potential. The Committee has accordingly suggested that :

- (a) The Selection Committee for choosing Vice-Chancellors should include Director-General, ICAR and Chairman, UGC as members in each case;
- (b) The Vice-Chancellor should be the Chairman of a compact Board of Management with a membership not exceeding fifteen; and
- (c) The State Government should adopt a positive policy of support to agricultural universities. Firstly, they should review the “University Acts and bring them in line with the Model Act recommended by the ICAR and implement it faithfully. They should transfer Statewide agricultural research responsibility to agricultural universities along with staff farms, budget, buildings, equipment, etc. Parallel research organisation should not be set up in the State Departments in the name of adaptive research. Secondly, agricultural universities are essentially State-institutions and as such State Government should accept direct responsibility for both the development and operational costs. The Central support from the ICAR could only be supplementary in nature.

They have also suggested that future assistance from ICAR

should be based on the stage of development of an agricultural university so that the disparity between the new and the old, and the strong and the weak are narrowed down as much as possible. The Committee has also proposed that ICAR should use Central assistance as an incentive and an instrument to achieve the organisational pattern and the institutional model of an agricultural university with all essential features.

It has been suggested that ICAR should firmly adhere to policy of having only one agricultural university in a State. For Uttar Pradesh and Maharashtra, which have three and four agricultural universities respectively, the Committee has suggested a two-tier coordinating mechanism.

The Committee has recommended that in Himachal Pradesh and Rajasthan, the existing agricultural complexes attached to the general universities (Himachal Pradesh University and University of Udaipur respectively) should set up as separate agricultural university and the possibility of establishing an agricultural university in Jammu and Kashmir should be explored with the State Government.

The Committee has paid particular attention to practical training and self-employment of agricultural graduates.

It has identified a number of weaknesses in the existing arrangements for practical training and has suggested several important measures.

A model year-wise practical training programme has been drawn up by the Committee which recommends that at least fifty per cent of a student's time should be devoted to practical work and that field practicals should constitute about thirty-five per cent of the total work load apart from laboratory practicals. It has suggested the introduction of a compulsory crop-production programme for the final year agricultural graduates for two crop seasons. For this, a group of five students should be given two hectares of land on which they will

carry out all agricultural operations from tillage to harvesting and marketing, the profits to be retained by them. The development of similar programmes has been recommended for veterinary, engineering, home science and other categories of graduates. As several universities have yet to develop satisfactory instructional farm facilities, it has been recommended that the State Governments concerned should help the universities to acquire additional farm land, the cost of development could then be borne by the ICAR. The other steps suggested by the Committee in this regard are (i) the setting up of a revolving fund to be financed by ICAR for operating the crop production course and 'earn-while-you-learn' schemes, (ii) an extension methods course involving stay in the villages continuously for fifteen days, (iii) provision of adequate transport facilities and camping equipment for such village work. The Committee has examined in detail the question of introducing internship as a compulsory degree requirement for agricultural graduates. It has come to the conclusion that the internship should be compulsory only for veterinary graduates; in the other cases, practical training should be suitably strengthened during the degree programme itself on the university farm.

The Committee has identified at length the constraints which prevent agricultural graduates from taking self-employment.

It is of the view that, in the present context of employment pattern of agricultural graduates, the objective of self-employment can be achieved only gradually. It has suggested multi-prolonged efforts to be undertaken both by the agricultural universities and the State and the Central Governments to promote self-employment. The Committee has suggested that agricultural universities should take up the following steps in this regard.

- (i) They should attune their training programmes to train graduates with motivation for self-employment; such graduates

should also be capable of assuming extension functions at the village level.

- (ii) Undertake large scale training programmes for training of professional farmers.
- (iii) In order to attract more students with rural and agricultural background to join degree programmes at agricultural universities, at least twenty-five per cent of the seats should be reserved for students who are studying in rural schools and who have stayed in the village for three years.
- (iv) Expansion of scholarship facilities for rural boys.
- (v) Each university should identify annually at least twenty-five final year students in each faculty who have the aptitude for self-employment and who can be given a concentrated "self-employment" elective programme, attention being paid to managerial, financial and practical aspects as well as on supplementary occupations for ensuring income all the year round.
- (vi) In order to encourage consultancy work at the village level on a self-employment basis, a scheme should be evolved for the setting up of consultancy organisation in each university to help and guide the agricultural graduates in the initial stages of the consultancy practice till they gain confidence.

The Committee has recommended that each State Government should launch a pilot scheme for self-employment of agricultural graduates with provision for allotment of suitable land on easy terms, sanction of adequate loans from financial institutions at concessional interest rates, subsidies on purchase of agricultural inputs, preference in allotment of agro-

service centres and input distribution agencies and rebate on excise duty in tractor purchases. These facilities should be given only to candidates sponsored by agricultural universities.

The Committee has recommended the setting up of a Placement Bureau in each agricultural university for identifying areas of self-employment and the facilities needed for success, maintain liaison with potential employers and financial institutions/input agencies and to function as manpower cell.

The Committee is of the view that the home science colleges of agricultural universities are not very different than the home science colleges attached to general universities.

They are also by and large urban in character in terms of curricula, faculty, students, equipment, and teaching materials. They cater mostly to middle and higher income groups. Non-availability of qualified teachers, lack of rural orientation of the faculty, failure to attract rural girls to home science colleges, extremely weak research base, and in some cases inadequate resources, have been identified as the major limiting factors.

In order to give rural orientation to home science programmes, the Committee has recommended that the home science colleges should first and foremost clearly specify that the target-group they seek to serve are the farm women and children particularly the landless labourers, artisans, small and marginal farmers. The Committee has stated that unlike an urban home which is a mainly consumption unit, the rural family is a production unit also in which the women play a multifarious role both as primary producer of food and home maker. This fact should be clearly kept in view while drawing up training and research programmes of home science colleges.

The other suggestions for giving rural orientation to home science are :

(i) Keeping in view the general

reluctance of lady candidates in rural areas to go outside their homes for long duration, the home science colleges should give greater emphasis on short-term training programmes/diploma programmes for both middle pass or matric pass (arts and science) candidates.

(ii) In respect of degree programmes at least thirty per cent of the seats in home science colleges should be earmarked for rural girls and remedial courses may be organised to offset their deficiency in science subjects.

(iii) The content in the home science curricula with regard to the agriculture should be increased considerably from the present level to constitute at least one third of the total course load.

(iv) A drastic revamping of the syllabus should be made to cater to rural needs which should include an integrated practical training programmes, setting up the model rural homes in the colleges and intensive village contacts. For this purpose a Committee of Deans of home science colleges should be set up to completely revise the syllabus.

(v) In order to encourage the spread of home science in rural areas, the State Governments should introduce home science in selected rural schools as a science subject and home science colleges should take up the responsibility of training of Home Science teachers.

(vi) In view of the present neglect of home science research which also indirectly affects the quality of educational programmes, research staff in home

science colleges should be strengthened.

(vii) Extension education activities should be intensified including adoption of villages, organisation of training programmes in home science for school teachers, extension workers, farm women and rural girls.

The Committee has recommended that an agricultural graduate should be a general purpose broad-based agriculturist with adequate exposure to aspects relating to animal husbandry; agricultural engineering, and extension methodology.

Tendencies to introduce specialisation at first degree level should be discouraged.

For this, a Committee of Deans for each faculty should review the courses and curricula, separately. The Committee has commented on the proliferation of the post-graduate courses and has suggested that the ICAR should (i) evolve a national coordinated plan for development of post-graduate education in agriculture, (ii) strengthen its accreditation mechanism to ensure that new post-graduate programmes are started only after building up strong faculty and research base over a period and are fully justified on the basis of manpower demand in that specialization.

The Committee has stressed the need to remove disparities between the main and outlying campuses in terms of quality of staff, facilities and programmes. It has suggested posting of senior staff from the main to the regional campuses offering incentives for staff to work on outlying campuses and to give due priority in matters of programme and staff development to those who work on regional campuses.

In order to strengthen fundamental research at agricultural universities, the Committee has suggested the setting up of centre of excellence in each of the major disciplines in selected agricultural universities and the strengthening

of the scheme for the award of Professor of Eminence/National Fellows.

In order to streamline the research infrastructure of universities, it has suggested a three-tier set up consisting of (a) main campus for basic and applied research on State-wide problems (b) regional stations in major agro-climatic zones for inter-disciplinary applied research on regional problems and (c) sub-stations for evaluation and testing of varieties and techniques. For this purpose, each agricultural university should appoint expert committees to review in depth the existing research organisation. The Committee has suggested diversification of research programmes by strengthening research in the fields of Agricultural Engineering and Home Science. Fisheries Science and Animal Production has also been suggested.

The Committee has stressed the need to decentralise extension activities by involving the regional research stations and the campuses in the extension education programmes. It has recommended the setting up of District Krishi Gyan Kendras (on the model followed by the Haryana Agricultural University) with provision for diagnostic facilities, seed stores and treatment of minor diseases of animals. Each agricultural university should have farm advisory service, a training unit and a communication centre for organisation of training programmes and correspondence courses for various categories of official and non-official personnel including farmers, school teachers, rural youth etc. and for preparing extension material. The Committee has laid particular emphasis on the strengthening of linkage mechanism between the university and the State Government and also between university and the research institutions in the concerned area for speedy transfer for research results and to ensure feed back.

For this purpose it has recommended that a Memorandum of Understanding may be developed clearly delineating role of the

university and the development departments.

In order to improve the quality of the faculty, the Committee has suggested that a time-bound programme of training to be implemented with five years should be drawn up by each university with provision for liberal study leave facilities, covering at least twentyfive of the faculty members. The organization of a series of Summer Institutes/Seminars especially for the development of teaching material in individual subjects and for revision of courses has also been suggested.

The Committee has reiterated the National Commission on Agriculture recommendation that the level of financial assistance to agricultural universities should be raised to the level of at least ten to twenty per cent of the agricultural budget of the State. It has stressed the need to ensure that the State Governments to provide adequate funds to meet the committed expenditure and contingencies for want of which many of the research programmes started by the preceding plans have suffered. The Committee has commended the adoption of a 'Block Grant System' both from the Centre and the States. In addition they have suggested that a percentage of the market fees derived by market committees should be earmarked for agricultural universities.

The Committee has stressed the need for systematic planning for infrastructure development and has suggested that ICAR should develop a model university development plan for general guidance. Each university should then prepare a ten/five year Development Plan comprising an academic plan, Master Campus Plan and financial plan. The other suggestions in this regard are: (i) the constitution of a campus development committee in each university for proper implementation of the Master Plan and for effective use of building space, (ii) setting up of instrumentation centres for proper maintenance of costly equipment, and (iii) developing first rate experimental stations.

The Committee has suggested the setting up of a small planning and evaluation unit in each university which will be responsible for preparing an overall university development plan and for carrying out studies on related problems. In order to periodically review progress and ensure accountability, the Committee has recommended that ICAR should set up, once in five years, evaluation committees for reviewing the work of each university. The university should, in addition, carry out its own internal evaluation of the working of individual colleges/departments/programmes from time to time. With regard to the coordinating role of the ICAR which discharges the functions of the University Grants Commission with reference to the agricultural universities, the Committee has suggested that ICAR should use financial assistance as an instrument to ensure that the essential features of the agricultural university system are complied with. It should ensure that the State's support and approval is available before releasing its assistance for starting new colleges/institutions. It has recommended that ICAR should give greater emphasis and priority to programmes aimed at improving the quality of education, revision of courses and curricula, production of text-books and inter-university collaboration.

The Committee has also briefly reviewed the progress of each agricultural university and has given its observations about some major aspects of their functioning.

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Reorientation of Commerce Courses Suggested

The need to restructure the commerce courses to make them acquire social relevance was stressed by the participants of the seminar on "Commerce Education" held recently in Hyderabad.

Mr B.P.R. Vittal, State Finance & Planning Secretary who inaugurated the seminar said that the professional institutions and the Universities were both autonomous institutions intended to set standards in their respective field of operation, help achieve those standards and monitor such achievements. While this has the advantage of helping to preserve standards, it might also have the incidental disadvantage of making the institutions in-grown; and unless they made a deliberate attempt to periodically review their own purposes, assess their performances and attend to the

and professional institutions to review and remodel the skills of chartered accountants keeping in view the needs of the society and the nation.

There was need for a continuing dialogue between the professional institutions and universities so that the areas of collaboration could be indentified.

Mr Kabra said that the Universities had a significant role in taking up research into various concepts of accountancy. The Institute of Chartered Accountants had realised this aspect and instituted scholarships in various universities to encourage research.

Stating that there was need for standardisation of commerce education in the different universities in the country, Mr Kabra assured the co-operation of the Institute in this regard.

evaluation should be tried at the postgraduate level before it is extended to undergraduate level. In the light of the experience gained during the last three years the committee has favoured that sessional assessment should be open and the script should be shown to the students. Suitable machinery has been suggested to look into the grievances of students. The committee has suggested that marks or grades of sessional assessment should not be totalled up with the marks or grades obtained in the external examination. The sessional evaluation system has so far been introduced at different levels by sixty seven universities in the country. The committee has recommended that some universities may consider introducing sessional evaluation on an optional basis in the first phase. In the beginning the grades should be awarded by converting numerical marks into 'letter' grades. Conversion tables should be worked out for this purpose by the universities. This will help teachers and students to be oriented to the new system. In course of time numerical marks can be dispensed with and only letter grades adopted.

On the issue of question banks, the committee feels that these should be released to the students well in time so that they have a better idea of contents and objectives of the course. A certain portion of the questions, say twenty five per cent, may be set from outside the question bank. The concept of the question bank is more relevant at the undergraduate level. But there should be no objection if a university department develops banks at the postgraduate level also. Nineteen universities have developed question banks.

Correspondence course in educational planning and management

The National Staff College for Educational Planners and Administrators in association with the Unesco Regional Office of Education, Bangkok (Thailand) will organise a correspondence course in educational planning and

CAMPUS NEWS

need to change in keeping with developments in the world, they were occasionally in danger of losing their social relevance.

Mr Vittal referred to the views of Dr V.K.R.V. Rao Committee and Dr Charat Ram on commerce education and said that even if we consider it to be a clearly professional course the question arises as to how far University education should tailor itself to the specific needs of the employment market.

The seminar, he said should concern itself with some basic issues like the purpose of commerce education, the contents of the course, whether the students required to be given a more practical bias etc.

Mr B.L. Kabra, President of the Institute of Chartered Accountants of India said in his address that there should be close collaboration between the Universities

Prof. Laxmi Narain, Dean of Commerce Faculty, Osmania University suggested that the professional institutes could associate the University faculty in framing their syllabi and conduct of their examinations.

The seminar was sponsored by the Institute of Chartered Accounts of India in collaboration with the Osmania University. It was attended by the delegates drawn from the faculty of the Universities of the southern States, members of the Institute of Chartered Accountants of India and representatives of the trade and industry.

UGC panel for sessional evaluation

The implementation committee on examination reforms of the University Grants Commission has recommended that sessional

management for senior education officers preferably not below the rank of district education officers at the Centre and in the States/Union Territories.

The main objectives of the course are to acquaint the participants with the developments in the field of education in India in the post-independence period; to familiarise the participants with the latest trends in the field of education in general, and educational planning and management in particular; to develop among the participants requisite attitudes, skills and knowledge to improve their technical competence and effectiveness as educational planners and administrators; and to introduce the participants to a process of self-learning aimed at their continuing professional growth.

The main areas to be covered in the course are: review of educational planning and administration in India: principles and techniques of educational planning; statistics required for educational planning; economics of education and basic principles and techniques of Modern Management with particular reference to their applicability to educational administration. The course would be divided into two parts: (i) correspondence programme and (ii) personal contact programme. Learning materials in the form of unit lessons will be sent to the participants by post. Each unit will be followed by a set of assignments. The participants will be required to complete five assignments and send them to the Staff College by the prescribed date. They will also be invited twice to the Staff College at New Delhi for a personal contact programme.

Study on graduate employment and higher education

The International Institute for Educational Planning, Paris and the Department of Statistics, Calcutta University have jointly undertaken a study on graduate employment and higher education in West Bengal. This is the fourth of the series of studies conducted by the Institute in Asian countries.

The Institute, a wing of the United Nations Educational, Scientific and Cultural Organisation has sanctioned six thousand dollars for the project. An Advisory Board has been formed with the Union Minister of State for Education and Social Welfare, West Bengal Minister for Higher Education, Chairman of the University Grants Commission and the Vice-Chancellors of Calcutta, Burdwan and North Bengal Universities.

Dr. P.K. Bose Head of the Department of Statistics and Chairman of the Board said that the problem of the educated unemployed could not be solved until the pattern of higher education was changed. Higher education should be made employable, he said. The problem of unemployment among the educated had to be studied in different ways, but no study had so far been conducted on the employability of the present system of higher education. Besides, he argued that the present system could not equip the students with the kind of skill needed in the labour market.

Bhopal meet suggests autonomous body for education

Educationists participating in a four-day 52nd all India education conference held in Bhopal called for entrusting education to an independent, autonomous, statutory body composed of representatives of teachers, educationists, the government and the public.

They decried the rapid changes and experimentation in the sphere of education, being made mostly on trial and error basis.

The conference suggested retention of education in the concurrent list of subjects in the interest of national solidarity and uniformity in the educational system throughout the country.

The conference also suggested the abolition of the present system of public examinations replacing it with a system of internal assessment in all educational institutions.

It also called for modifying the

present pattern of education into four categories: (a) pre-school education for the age group three to six to be fostered with financial assistance from the Government, (b) elementary education (with modification, if necessary) for age group six to fourteen (c) secondary education (if necessary in two stages—high and higher secondary) for age group 14 to 18 and (d) higher education—three years, undergraduate stage, preferably for specialisation and postgraduate of two to three years for higher specialisation and research.

The conference suggested that education should be integrated with the national plans. It also urged the government to prepare a model education code for schools for guidance.

A suggestion was also made to make the study of Gandhian thought and action compulsory at every stage of education.

NSS drive of Punjabi University brings back children to schools

The NSS volunteers of Punjabi University colleges during their current camps in villages have, as one of the camp projects, started a campaign to bring back to schools such village children as had discontinued their primary education halfway. They are also involving village panchayats and school teachers in this campaign.

The volunteers of the Government College, Sangrur camping in a nearby village have planned to whitewash all the houses of the Harijans in the village.

Another project taken up by the volunteers is to motivate the villagers for immunisation of their children against different diseases. Seventy women students drawn from different colleges camping in a village in Bhatinda district have helped the immunisation of the entire children population in the village during their five days' camp. The NSS unit of Mata Gujri College during their ten days' camp in a village have levelled up a depressed area to convert into a park for the weaker section children and have planned to open

an adult education centre in the village under the National Adult Education Programme.

Delinking of intermediate education

The intermediate education is likely to be separated from the university education in Bihar. A separate Intermediate Education Board for the management of two-year intermediate education is likely to be set up. A committee of the Vice-Chancellors has been constituted to examine, in detail, the scheme. The Bihar State Inter-University Board at its meeting held recently took this decision when all the Vice-Chancellors of the State, the Deputy Chairman of the Board and the government officials were present. The Board also decided to open new colleges for women at Saheb-ganj, Giridih, Aurangabad, Bihar-sharif and Bettiah in order to promote female education in these areas. The meeting also decided that the universities may set up teachers training college at Gaya, Hazaribagh, Dalton-ganj, Arrah, Chapra, Madhubani, Motihari, Purnea and Darbhanga under their respective jurisdiction. A five member committee was constituted to examine the feasibility for the establishment of colleges in physical education at Ranchi and Muzaffarpur to work out the financial requirements and to draw up courses of study. The committee is expected to submit its report within a month. The management of Fine Arts and Crafts College of Patna was transferred to the State Government.

The meeting also approved the decisions of the Vice-Chancellors' conference regarding grant of autonomy to six premier colleges of the State and affiliation of homoeopathic and ayurvedic colleges to Bihar and K.S.S. University respectively.

Art Varsity proposed at Kalady

Sri Jayendra Saraswathi Swami of Kanchi Kamakoti Peetam has said that an independent university to teach forms of art in Malayalam and Sanskrit will be

started at Kalady, the birth place of Adi Sankara within six months.

He said that selected students would be provided free boarding and lodging facilities at the proposed university.

A seven-year course on pure Ayurveda would begin soon at Coimbatore under the auspices of the Kanchi Kamakoti Peetam.

Bihar Inter-Varsity Board regulates MD/MS admissions

The Bihar State Inter University Board has decided to regulate admissions to the MD/MS courses through competitive tests.

The Board has decided that the system of admission in post-graduate medical courses on marks basis should be withdrawn. The meeting was presided over by the Chancellor, Mr Justice K.B.N. Singh and attended by Vice-Chancellors of all the Universities of State. The Deputy Chairman of the Inter University Board and the Director of Higher education were also present.

Earlier the Regulations Committee of the Patna University (Faculty of Medicine) had turned down the proposal of admission through the competitive test. Now the decision of the Board would become mandatory for all the universities in the State.

Chair for Rabindra Sangeet

Rabindra Bharati University will soon have a separate department for the study of Rabindra Sangeet. The decision of the University Grants Commission was made after a Review Committee of Vice Chancellors had submitted its report on this issue.

Dr Pratul Gupta, Vice-Chancellor of the University said that till now Rabindra Sangeet was taught together with folk songs, kirtans and other traditional songs, in a single vocal music department. The creation of the new department would lead to specialised study of Rabindra Sangeet. The University has also been sanctioned additional posts to strengthen and expand its various departments.

Twenty fellowships have been sanctioned for carrying the research work in the University and expansion programme of the library.

Dr Gupta hoped that the Commission grants would end the stagnation in the university.

VCs to decide on English language

The Vice-Chancellors of seven universities of West Bengal will meet the State Education Minister, Prof. Sambhu Ghosh to decide the question of continuing English as a compulsory language in the degree course.

The State Education Minister said in Calcutta that the government had kept its mind open on the issue so far. Prof. Ghosh said, one section of the academicians, meanwhile had urged on all concerned for the continuance of English language in the Arts degree course as optional subject along with Bengali while others were strictly opposed to this arrangement.

The meeting will also consider ways and means of co-ordinating the work of different universities to bring about harmony and uniformity in the determination of the 'contents of education'.

Reconstituted AICS to meet in July

The reconstituted All-India Council of Sports, headed by Field Marshal S.H.F.J. Manekshaw is expected to hold its first meeting in July this year. The Council will among other things prepare the draft of the government's new sports policy.

Later meetings of the representatives of the State Sports Councils and Sports Ministers of States will be held to discuss the various suggestions and recommendations of the Council. The policy will then be finalised by the government and placed before the Parliament in its monsoon session.

The Council will also advise the government on the size of the Indian contingent for the Commonwealth Games to be held at Edmonton.

Novel education scheme introduced at SNT

Dr (Mrs) Madhuri Shah, Vice-Chancellor of SNT Women's University said in Poona that her university wanted to ensure that women who had to give up their education in school or did not even get a chance to go to school can now go to college and get a degree. For this a novel scheme has been introduced from the ensuing year. The candidates have to be over twentyone years and will have to appear for an entrance test and university would be ready of help to all those who wish to take this test by supplying them with lectures and material through post. Such students will get lectures, response sheets and library facilities. The scheme will start functioning from 1st July.

Summer Institute in Purva Mimamsa

Sanskrit scholars from twenty different universities including Jammu and Kashmir, Gauhati, Poona and Kerala participated in a three week Summer Institute which was held in Bangalore recently. The Vice-Chancellor of Sri Venkateswara University, Prof. K. Sachidananda Murty inaugurated the Institute organised by the Post-Graduate Sanskrit Department of Bangalore University with financial assistance from the University Grants Commission. Shri T.R. Jayaraman, Vice-Chancellor of Bangalore University presided over the inaugural function of the Institute.

Traditional and modern scholars of Sanskrit from the Universities of Banaras, Mysore, Tirupati, Madras, Karnatak and Poona participated in the discussions.

Prof. K. T. Pandurangi, Head of the Department of Sanskrit, Bangalore University in his welcome address said that Purva Mimamsa was the earliest school of Indian Philosophy. Though started as an aid to interpret Vedic texts and fix the procedure of rituals it developed into a science of procedural law and school of realistic philosophy.

Bombay establishes sports medicine centre

The Maharashtra Chief Minister, Mr. Vasantrao Patil, while opening the Balabhai Nanavati Hospital Sports Medicine Centre praised the efforts of the organisers and announced a donation of Rs. 10,001 towards this project.

Besides the usual round-the-clock services provided by the hospital, those of special importance to sport will be provided. The hospital is well stocked with the latest equipment and facilities for cardiac function tests with developed departments in physiotherapy, electrotherapy, occupational therapy, etc. To begin with a special OPD will be started which will be extended later to suit requirements. This will be attended by a physician, general surgeon and orthopaedic surgeon. They will also render emergency service in the case of injuries suffered by sportsmen because of sports activities.

A sports-medicine oriented report of the complete initial check up can be availed of at a reasonable flat rate. A case history of each sportsman will be maintained incorporating details of initial and followup checks. This will be of immense value to the sportsman as well to the coach.

Delhi has the first natural history museum

Mr. H.M. Patel, Union Finance Minister, while inaugurating the National Museum of Natural History said that the museums should not be mere store houses but instruments of mass education. The museum, the first of its kind in the country, is housed in the Federation of Indian Chambers of Commerce and Industry. The Department of Science and Technology has taken keen interest in its organisation and utilised all modern techniques to arrest attention of the visitors. A multimedia presentation system involving exhibits, models, specimens and variety of audio-visual aid is used to portray man's environment demonstrating the complex inter-relationship among plants,

animals and the inorganic components that constitute the natural environment.

Dr. S.M. Nair, Head of the Museum, is keen to make it a modern, sophisticated and imaginative communicative system. The museum will provide special emphasis for school children with a lending collection of exhibits, hobby clubs and discovery room where children can find answers for intriguing questions about the natural world around them. Dr. Nair hopes to build up a huge model of dinosaur fabricated in fibre-glass. The marvels and mysteries of life on earth are recaptured in exhibits to provide a stimulating exposure through time and space.

There are also three-dimensional exhibits of the ecology of the pond, desert and mountain. An interesting aspect of the museum is that it attempts to make people interested in their immediate environment.

Varsity broadcast stations to be set up

The Union Minister for Information and Broadcasting, Mr. L.K. Advani said in Poona that he was inclined to favour the setting up of independent university broadcasting stations for educational purposes as recommended by the Verghese Committee.

Mr. Advani said that he had

List of University Institutions in the Commonwealth

The twenty-second edition of the list of university institutions in the Commonwealth is now available with the Association of Commonwealth Universities, 36 Gordon Square, London, England WCIH OPF. Single copy can be obtained free on direct request. Larger orders will however be charged at cost price.

This list gives the personal names of the executive heads of Commonwealth universities and of the officer at each to whom general enquiries should be addressed. Three hundred Commonwealth institutions are listed.

discussed the proposal with Mr. D.A. Dabholkar, Vice-Chancellor of Poona University who had originally mooted the idea.

Such educational broadcasting stations would be of immense benefit to rural colleges affiliated to the universities and could be an effective means for the spread of education in remote rural areas.

Bihar to change university set up

The Bihar Government has recently promulgated a series of ordinances bringing about drastic changes in the administrative set up of universities and banning inter-alia, opening of private teachers training and physical training institutions in the State. The ordinances envisage vital changes in the control and management of the financial administration of the universities and modifications in the statutory provisions relating to higher education. The idea of appointing a Pro-Chancellor has been abandoned. However Financial Adviser would be appointed by the Chancellor on the advice of the Government who would coordinate the financial position in the different universities.

National policy on education

A meeting of the State Education Ministers will be held early in July to consider the draft of the National Policy on Education. This was stated by the Union Education Minister, Dr. P.C. Chunder at the concluding session of the parliamentary consultative committee attached to his Ministry.

He said that the discussions had already been held at various levels in order to take a final view on the policy governing education at the secondary level.

Pak varsities hockey team to visit India

Fortyfive top hockey players from more than fifteen Indian universities, selected on the basis of their performance in the zonal

and All-India Inter-University matches, are undergoing training at the National Institute of Sports in Patiala. These boys are being trained for national hockey championship to be held subsequently.

There is a possibility of a combined universities team from Pakistan touring India in September to play some matches against their Indian counterparts. The date and venue are yet to be confirmed from the Pakistan Universities Sports Board.

Need for planned higher education

Dr. A.R. Kidwai, Chairman, Union Public Service Commission said in Nagpur that if higher education was allowed to expand in an unplanned fashion, forces of social disorganisation would be encouraged and thwart national progress. This would obviously require considerable investment of funds and may also need regulation or new institutions. Dr. Kidwai said that more legislation or funds were not enough to improve the quality of education. The right type of leadership, dedicated teachers identifying themselves with the interest of students and better motivated and disciplined students was the crying need of the hour.

Diploma course in Telugu

The Andhra University has agreed to start a diploma course in Telugu through Hindi for the non-Telugu people from the current academic session.

The university Syndicate has agreed that the Diploma course be started in the Department of Hindi. The necessary financial and technical assistance for this course would be made available by the University Grants Commission.

Women eligible for Punjabi Varsity exams

Dr. Amrik Singh, Vice-Chancellor, Punjabi University said in Patiala that women conti-

nued to be eligible to appear as private candidates in Punjabi University examinations and the university does not contemplate any change in this direction.

Students from commonwealth countries to be the guests of Lethbridge

Twenty university students from various Commonwealth countries will have the opportunity to study Canada firsthand this summer. The University of Lethbridge has arranged a programme which is being held in conjunction with the Commonwealth Games at Edmonton for this purpose. The visiting students as well as twenty students from the University of Lethbridge will undertake an intensive four-week course in July-August on Canadian/Commonwealth studies. The course will include a two-day visit to Edmonton to take in field events, team gymnastics and badminton at the games. Bangladesh, Barbados, India, Lesotho and Mauritius are likely to be represented and students will be encouraged to stay with Lethbridge families.

Initiated by the University of Lethbridge's continuing education and interdisciplinary studies departments, the programme is the first of its kind in the history of the Commonwealth Games. Funding has been provided by the Canadian International Development Agency and the Alberta Government. The forty participants will be involved in a multidisciplinary course of study meant to introduce them to the diversity of Canada and Canadian life. Topics to be covered include: geography; history—Canadian Indians and Hutterites; farming and ranching; Canadian politics and government; Canadian art, business, education and literature, sport and recreation in Canada; and Canada's inter relationship with the Commonwealth. Field trips will be made each afternoon to such places as Hutterite colonies, Indian reserves, irrigation forms and historical museums.

Patna gets central instrumentation laboratory

The University Grants Commission has sanctioned a sum of Rs. eight lakhs to Patna University for setting up a Central Instrumentation Laboratory in the university. Dr. A.K. Dhan, the Vice-Chancellor of the university announced that five additional posts have also been given by the Commission for the establishment of the Centre in the university. The proposed central laboratory would ensure efficient maintenance of the costly equipment of different science departments in the university. It will also undertake designing and fabrication of equipment for the use of science departments and to take up projects for the benefit of local industries and train science graduates for self-employment.

The Commission has also made available a sum of Rs. 7,08,628 for the completion of some of the buildings of the university.

Fellowships for handicapped

The University Grants Commission has awarded twelve junior research fellowships to physically handicapped candidates in humanities including social sciences for 1977-78. The value of the fellowships is Rs. 400 a month with a contingency grant of Rs. 1500 per annum. The following are the recipients of the fellowships: (1) Nekkalapu Jangamaiah (Physics), (2) Arun Jot Malhotra (Physics) (3) Haranharan Balasubramaniam (Statistics), (4) Satish Kumar Srivastava (Botany), (5) Kum. Anuradha Misra (Zoology), (6) Om Prakash Sharma (Sanskrit), (7) Vidyand Mudgal (Sanskrit), (8) Chander Bhan Kalwa (Hindi), (9) M. Balakrishna Samaga (History), (10) Jaskaran Sharma (History), (11) Madan Singh Chawla (History) and (12) Ved Prakash Sharma (Political Science).

UGC selects national lecturers

The University Grants Commission has selected thirtytwo

scholars as national lecturers for 1978-79.

The selected scholars will visit universities and institutions and give a series of lectures of review nature.

They will give special attention to newly established but not well developed institutions so that teachers and students there get the benefit of their specialised knowledge and learn about the latest developments in their field.

The national lecturers have been selected from the disciplines of Chemistry, Biological Sciences, Geology, Mathematics/Statistics, History, Political Science, Economics, Philosophy, Psychology, Commerce, Hindi, Tamil, Law, Education and English.

Commonwealth non-formal education conference to be held in India next year

The Commonwealth Conference on non-formal education for development is to be held next year in India and is likely to be attended by thirtysix commonwealth countries of which thirtytwo would be in the category of developing countries.

Two basic priorities which concern all developing commonwealth countries will dominate the deliberations of the two-week conference. One would be the education of unschooled and under schooled children and the other would be with regard to programmes of adult education and literacy.

Dr. Malcolm S. Adiseshiah made this announcement on his return from London after attending a preparatory meeting for the conference at the invitation of the Commonwealth Secretariat.

India had more industrial infrastructure, more scientific and technical manpower and more agricultural base than many of the commonwealth countries. But at the same time there were more poor people here. India is the only country which has begun pioneering in the area of educa-

tion of unschooled children and this part of the conference would be relying on Indian expertise.

Manchester study programmes for administrators of higher education

The special options of the next three study programmes for administrators of higher education to be held by the University of Manchester, Department of Administrative Studies for Overseas Visiting Fellows are: Academic Management and Administration (September-December, 1978); Staff Development and Training (April-July 1979); and Extension and Community Services (September-December 1979). These study programmes are designed to meet the needs of senior and experienced administrators (primarily those from developing countries) who are unable to spare a long period away from their work or who are not specifically seeking further academic qualifications. Enquiries may be addressed to the Director, Higher Education Administrators Programme, Department of Administrative Studies, University Precinct Centre, Oxford Road, Manchester M13 9QS.

Personal

Prof. M.V. Mathur, Director, National Staff College for Educational Planners and Administrators has been unanimously elected as a member of the Governing Board of the Commonwealth Council for Educational Administration for the years 1978-82. Prof. Mathur also presided over the sectional meeting at the Fourth International Intervention Conference in Educational Administration in Canada and USA during his recent visit in May.

A list of Doctoral Theses Accepted by Indian Universities

SOCIAL SCIENCES

Psychology

1. Arora, Manju. A study of psychoticism and its relationship with some socio-economic variables. Post Graduate Institute of Medical Education and Research, Chandigarh.

2. Bhagavathy, G. P. Kumari. Analytical study of the personality, intelligence, values and problems of adolescent girls. University of Kerala.

Anthropology

1. Nishtala, Venkata Kameswara Rao. Caste and politics in Telangana village and its region : A study in village leadership. Andhra University.

Political Science

1. Kalyani, T. The administration of Madras City Municipal Corporation and state control over it. University of Madras.

2. Madhi, Kunja, The Assam Legislative Assembly, 1962-72 and its impact on the socio-political set-up of Assam. University of Gauhati.

3. Peshwe, Vasant Madhaorao. Study of power structure in two rural communities - Bhari and Manpur. Nagpur University.

4. Raj, Christopher Sam. The U.S. Executive, Congress, and the issue of American troop levels in Western Europe, 1950-1968. Jawaharlal Nehru University.

5. Tripathi, Ambika Prasad. Civic administration and politics in Kanpur since the establishment of corporation. Kanpur University.

Economics

1. Atchi Reddy, Mule. The agrarian history of Nellore : A study of selected aspects. University of Delhi.

2. Kim, Young Chul. A study of credit-use and resource allocation on small farms: A Korean case. Andhra University.

3. Lahiri, Asok Kumar. The demand for money. University of Delhi.

4. Shah, Maya Nalinchandra. Growth productivity technical progress and pricing in electricity in India, 1951-71. M. S. University of Baroda.

Law

1. Mohan, Saroj. Freedom of fishing under modern international law. Jawaharlal Nehru University.

Public Administration

1. Amrutha Rao, A. Personnel management in the Municipal Corporation of Hyderabad. Kakatiya University.

Education

1. Chakrabarti, Mukti. An inquiry into strategies of classroom teaching. M. S. University of Baroda.

Commerce

1. Desai, Jayendrakumar Raichandbhai. Labour management relations in Maharashtra State Road Transport Corporation. Nagpur University.

2. Rastogi, Uma Shanker. State Financial Corporation of Madhya Pradesh; An evaluation of its performance or working and achievement. Ravishankar University.

Management

1. Abdul Aziz. A study of leadership behaviour among middle level executives. University of Delhi.

HUMANITIES

Language & Literature

English

1. Indira, Varanasi. A systematic and semantic analysis of the emotive predicates in English and Telugu. Andhra University.

2. Mukhopadhyay, Asin Kumar. Nature in Shakespearean drama. University of Calcutta.

Sanskrit

1. Bhatia, Bhim Sain. A study of nyasa. University of Delhi.

2. Ingle, Suman Sadashivrao. Sanskrit sahitateel dut-kavye: Vivechanatmak abhyas. Nagpur University.

3. Nigam, Vinita. Kumarila Bhatta krta tantravarttika ka smrti pada. University of Delhi.

4. Sharma, Suresh Chandra. Pramukh smritiyon mein rajdharma swarupa. University of Delhi.

5. Yooyod, Upasika Sumon. Conception of Nibbana

in Theravada Buddhism. Visva-Bharati.

Hindi

1. Bajpaie, Kala. Ganghari: Vyaktitv evam krititv. Kanpur University.

2. Dedhia, Amruta M. Dr. Ramkumar Varma ke natya sahitya mein charitra chitran. S.N.D.T. Women's University.

3. Jha, Mithilish Kumar. Kavya vriti samiksha. Kameshwar Singh Darbhanga Sanskrit University.

4. Mehra, Malti. Pandit Krishan Bihari Mishra: Vyaktitv and krititv. Kanpur University.

5. Mishra, Radheysham. Upendranath Ashk ka natak aur katha sahitya ka samagr anusheelan. Vikram University.

6. Mishra, Ram Chandra. Adhunik chhayavad Hindi kavya per vedant ka prabhav. Kanpur University.

7. Pathak, Jaya. Pauranic chetna evam chhayavadottar prbandh kavyadhara mein uska samahar evam aklan. Vikram University.

8. Ramesh Kumari. Prasadyugeen natakon mein reshtriya-sanskritik chetna. University of Delhi.

9. Shah, Vindhyeswari. Nirala sahitya mein prem. University of Delhi.

10. Shrivastava, Lal Bahadur. Sursagar ke patron ka manovagyanik anusheelan. Ravishankar University.

11. Shukla, Hari Om Tatsat Brahm. Bundeli aur Kan-
noji ka tulnatmak adhyayan. Kanpur University.

Punjabi

1. Noor, Sutinder Singh. Mohan Singh dee kavita. University of Delhi.

Bengali

1. Basu, Dwipendranath. Kaliprasanna Singher jivan-o-sahityakarma. University of Calcutta.

2. Basu, Usha. Sarat sahitya yuga prabhab. University of Calcutta.

3. Chattopadhyay, Girindra Nath. Prak Chaitanyajuger kayekti bangakavye, biseshbhabe Srikrishnakirtane, Arbi-Pharsi sabda-o-tar prayog baisistya. University of Burdwan.

4. Gangopadhyay, Sukhendralal. Uttar tripurar laukik sabda prabachandir baichitra-o-baisistha. University of Calcutta.

5. Konar, Adhir Kumar. Keshab Chandra Sen: Tahar kriti-o-krititva. University of Burdwan.

Persian

1. Siddiqui, Mehmood Husainimiyani. The sufis memoirs written in India from the beginning upto the 16th Century A. D. with special reference to Kashaf-ul-Mahjab, Siyar-ul-Auliya and Siyar-ul-Arifin. M. S. University of Baroda.

Tamil

1. Ganesan, P. A critical appraisal of Parathithasan poems. University of Madras.

2. Singaravadivel, R. Similies in sangam literature. Madurai University.

Malayalam

1. Mohamed Bashir, M. Poetic craft of Kumaran Asan: A study based on his own manuscripts. University of Kerala.

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1. Bhagyalaxmi, Pusapati. Important lady characters in Telugu literature. Andhra University.

2. Krishna Murty, Kambhampaty Ramagopala. Andhra-mu avadhana vidya. Andhra University.

3. Narasimha Rao, S. L. The treatment of alankara in kavitraya Mahabharatha. Sri Venkateswara University.

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1. Basak, Taraknath. An urban analysis of Chittaranjan Township. University of Calcutta.

2. Harjit Singh. Ladakh: Problems of regional development in the context of growth point strategy. Jawaharlal Nehru University.

History

1. Bnattacharya, Saradindu. The credit system in Ancient India. University of Calcutta.

2. Devaki, S. History of North Arcot District 1600 A.D. to 1900 A.D. University of Madras.

3. Rai, Yogendra Nath. Valamiki Ramayan varnit-janjivan. Sardar Patel University.

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- Parameswaran, B. G. "Educational Psychology in India". *University News* 16 (11); 1 June 78: 959, 964.

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- Dahrendorf, Ralf. "Freedom of speech in universities". *Times Higher Education Supplement* (340); 19 May 78: 30.
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- "EDUCATION IN the draft five year plan 1978-83". *EPA Bulletin* 1 (1); Apr 78: 55-72.
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- Haqqi, S. A. "Aligarh University: Need for fresh thinking". *Mainstream* 16 (37); 13 May 78: 14-15, 34.
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- Joshi, A. W. "Improving undergraduate science education". *New Frontiers in Education* 7 (4); Oct-Dec 77: 29-37.

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- Haridwar Ram. "New language policy". *University Affairs* (Delhi) 5; Mar-Apr 78: 13-15.

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- Koul, Lokesh. "Evaluation system in 10+2." *University News* 16 (11); 1 June 78: 962-3.

- Lewy, Arie. "Comparative, co-operative and Universal aspects of the IEA subject matter surveys". *International Review of Education* 23 (3); 1977: 305-19.
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- Pearse, R. "Prediction of Private demand for education: An Indonesian study". *International Review of Education* 23 (3); 1977: 265-85.
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JAMIA MILLIA ISLAMIA Jamia Nagar, New Delhi-110025

Advertisement No. 4/78-79

Applications on the prescribed form, which can be had from the Registrars' Office on any day (except Sunday and Holiday) between 10.00 a.m. to 12.00 noon or by sending a self addressed and duly stamped (25 paise) envelope of 10 x 23 cms, are invited alongwith the postal order of Rs 3 for the following posts so as to reach the Registrar by 1.00 p.m. on July 15, 1978.

Adequate knowledge of Urdu and Hindi is essential for non-teaching post and ability to teach in Urdu and Hindi is a desirable qualification for teaching post.

D.A., C.C.A., H.R.A. and Retirement benefits etc. will be given as per Jamia rules.

Relaxation in any of the qualifications

may be made on the recommendation of the Selection Committee.

1. One Reader in Modern Indian History (Grade: Rs 1200-1900)

Good academic record with a first or high second class Master's Degree of an Indian University or an equivalent foreign qualification; a Doctorate Degree or equivalent published work in the subject concerned, and independent published work of a high standard in addition to the published work referred to above and at least 5 years experience of teaching Hons/Post-graduate classes or 10 years' experience of teaching undergraduate classes.

2. One Development Officer (Grade: Rs. 700-1300)

Essential

(1) A Post-Graduate degree with experience of administration at the

executive level, preferably in a University, for at least 5 years.

or

At least a Graduate with Administrative experience, preferably in a University, of not less than 15 years out of which at least 10 years should be in a supervisory capacity.

(2) Knowledge of Urdu.

Desirable

Familiarity with the working of different bodies of University and work relating to planning and utilisation of Development Funds.

Important

Incomplete applications in any form i.e. without attested copies of certificates, degrees, diplomas, mark sheets, prescribed application fee and on plain paper will not be entertained.

Zamir Hasan
OFFG. REGISTRAR

PANJAB UNIVERSITY CHANDIGARH

(Advertisement No. 14/78)

Applications are invited for the following posts so as to reach the Registrar, Panjab University, Chandigarh, along with postal orders for Rs. 10/- for posts at Sr. Nos. 1 to 8 and Rs. 5/- for posts at Sr. Nos. 9 and 10 by 17.7.1978. Fourteen days extra time is permissible to the persons who have to submit their applications from abroad.

Posts, Pay-Scales & Qualifications

1. Readers (Rs. 1200-50-1300-60-1900)
(Commerce & Business Management-1 (Temporary), Sociology-1, English-2 (Temporary-1, Permanent-1) (Linguistics), Economics-1, Philosophy-1, Sanskrit-1.

Qualifications Essential

- A first or high second class Master's degree of an Indian University or an equivalent qualification of a foreign university in the relevant subject with bright academic record;
- Either a research degree of doctoral standard or published research work of high standard in the subject concerned in journals of repute.
- About five years' experience of teaching post-graduate classes and/or research; and
- competence to guide research.

Evidence of being engaged in making innovation in teaching methods and production of standard teaching material, will be an additional qualification.

Desirable

Reader in Commerce & Business Management

- Either (b) above in Essential qualifications or Graduate and Associate/Fellow of the Institute of Chartered Accountants of India or England having passed the Management Accountancy Examination of the institute.
- Either (c) above in Essential qualifications or five years experience in a business organisation of repute.
- Specialisation in any of the following areas:-
 - Accountancy & Business Laws
 - Banking and Finance
 - Economics and Quantitative Methods.
 - Business Policy and Environment
 - Marketing Management
 - Production and Operations Management
 - Organisational Behaviour, Personnel and Industrial Relations.

Reader in Sociology

Specialisation in one or more of the following fields:

Social Stratification, Social Demography and quantitative methods in Sociology.

Reader in English (Linguistics)

Ph.D. in Linguistics in the field of English Language and Literature.

One should have ability to produce teaching material for Language, Laboratory, devise courses for specialised purposes and be conversant with the methodology of teaching English as a second language.

Reader in Economics

Specialisation in Economic Theory and/or in any important area of Economic Theory;

It is absolutely essential that the candidate should have a very sound background in Mathematics and Statistics.

Reader in Philosophy

Five years Post-Graduate teaching experience with Ph.D. on a topic of Contemporary Philosophical Significance. The candidate should preferably have competence in the field of Continental Philosophy, Advanced Ethics or Aesthetics.

Reader in Sanskrit

Specialisation in Epigraphy, Paninian Grammar, Pali or Prakrit.

2. Lecturers (Rs. 700-40-1100-50-1600)
Bio-Physics-1, Applied Mathematics-1, Commerce & Business Management-4, Sociology-1, Psychology-2, Ancient Indian History, Culture & Archaeology-1, Political Science-1, Electrical Engineering-1 (Temporary), Mechanical Engineering-2 (Temporary), Chemical Engineering-1 (Temporary), Anthropology (Physical)-1 (Temporary), Physiology-1 (Temporary).

Directorate of Correspondence Courses: Political Science-1, Sanskrit-1, Punjabi-1.

P.U. Evening College: Political Science-1
Qualifications
Essential

- A Doctor's degree or research work of an equally high standard; and
- consistently good academic record with 1st or high second class i.e. 55% marks or more (B in the seven point scale) Master's degree in a relevant subject or an equivalent degree of a foreign University. Having regard to the need for developing interdisciplinary programmes, the degrees in (a) and (b) above may be in relevant subject. The consistently good academic record at Pre-Masters' level would be interpreted as an average of 50% or above at the two examinations prior to Master's examination.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of a very high standard, it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is

not considered suitable a person possessing a consistently good academic record (weightage being given to M.Phil or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research Laboratory/organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Essential Qualifications for Lecturers in the Directorate of Correspondence Courses and P.U. Evening College.

- A consistently good academic record with atleast 1st or high second class i.e. 55% marks or more (B in the seven point scale) at the Master's degree in a relevant subject or an equivalent degree of a foreign University. The consistently good academic record at Pre-Master's level would be interpreted as an average of 50% or above at two examinations prior to Master's examination.
- An M.Phil. degree or a recognised degree beyond the Master's level or published work indicating the capacity of a candidate for independent research work.
- Candidate for the post of Lecturer in Punjabi must have passed B.A. examination with Sanskrit or Persian as elective subject or have passed Shastri or Munshi Fazil examination.

Desirable

- Proficiency in Hindi and Panjabi.
- Experience in a recognised institution of correspondence courses in responsible academic capacity.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident from his thesis or from his published work is of a very high standard, it may relax any of the qualifications prescribed in (i) above.

Provided further if a candidate possessing the qualification as at (ii) above is not available or not considered suitable, the University on the recommendation of the Selection Committee, may appoint a person possessing a consistently good academic record on the condition that he will have to obtain an M.Phil. degree or a recognised degree beyond the Master's level within five years of his appointment, failing which he will not be able to earn future increments till he obtains that degree or gives evidence of equivalent published work of high standard.

Explanation

- For determining consistently good record, average of 50% marks or more or (B in the seven point scale) may be expected at the two examinations prior to the Master's examination.

- (b) In seven point scale applicable to M.A./M.Sc. examination under the Semester system, Grade B corresponds to 50% to 59%.

Lecturers in Electrical Engineering, Mechanical Engineering & Chemical Engineering
Essential

First class Bachelor's degree followed by Master's degree in appropriate field.

Desirable

1. Two years' industrial/research/teaching experience in an Engineering Institution or a University.

2. Doctorate degree or published work of equal standard.

Lecturer in Physiology

First class Master's degree or Doctorate degree in Physiology or M.B.B.S. with teaching experience of at least two years in Physiology to graduate classes.

Desirable

Lecturer in Biophysics

Specialisation: Electronmicroscopy/Animal Physiology/Neurophysiology.

Lecturer in Applied Mathematics

First or high 2nd class in M.A. Mathematics/Applied Mathematics.

Lecturers in Commerce & Business Management

For Post No. 1-Production Management

Graduate or Post-Graduate degree in Mechanical/Production Engineering with post-graduate qualifications in Business Administration/Industrial Management/Production Planning and Control.

For post No. 2-Personnel Management.

Post-Graduate Degree in Personnel Management and Industrial Relations or M.B.A. with specialisation in Personnel Management/Personnel Psychology/Industrial Relations or Post-Graduate Degree in Psychology with specialisation in Industrial Psychology.

For Post No. 3-Marketing Management/International Trade and Foreign Exchange

M.B.A. with specialisation in Marketing Management/or M.A. Economics/M.Com. with Diploma in International Trade or Graduate/Post-Graduate degree in Engineering with Diploma in International Trade.

For Post No. 4-Management of Agriculture Rural Development

M.B.A. with specialisation in Agricultural Management or M.A. Economics-preferably with B.Sc. (Agriculture) or M.Sc. Agriculture with Diploma in Management or Agriculture and Co-operative/or M.A. in Sociology/Public Administration/Economics/Geography, with specialisation in Rural Development.

Lecturer in Sociology

Specialisation in one or more of the fields of marriage and family, social change, Indian Society and culture and Sociology of medicine.

Lecturer in Psychology

For Post No. 1: Specialisation: Child Psychology (Rural)

For Post No. 2: Specialisation in

order of Priority:

- (a) Clinical Psychology
- (b) Personality
- (c) Physiological Psychology

Lecturer in Ancient Indian History Culture & Archaeology

1. Diploma in Archaeology from the School of Archaeology, Archaeological Survey of India, New Delhi.

2. At least 2 years' experience in Excavations.

Lecturer in Political Science

Either Indian Govt. & Politics or Comparative Politics or Modern Political Analysis & Research Methodology with Statistics or International Politics, with specialisation in the study of India's Neighbours.

3. Research Associate-1 (Department of Sociology).

The position carries the following fixed consolidated emoluments (free of Income tax) with no other allowances:

- A: Rs. 1000 per month
- B: Rs. 1200 per month
- C: Rs. 1400 per month

It carries a contingency grant of Rs. 2000 per annum for approved contingent expenditure. The position is tenable initially for a period of three years extendable for another term not exceeding three years.

Qualifications
Essential

Ph.D. degree in Sociology and evidence of independent research work.

Desirable

Specialisation in the fields of urban and population studies.

4. Senior Research Fellows: (Rs. 600 (fixed) p.m.)

(Sociology-2, Chemical Engg. & Technology-1, Centre for Advanced study in Mathematics-1).

Qualifications

Senior Research Fellows in Sociology

Ph.D. degree with a good academic record.

Senior Research Fellow in Chem. Engineering:

Must be a first class Bachelor's degree holder in Chemical Engineering followed by Master's degree in Chemical Engineering. Some teaching/research experience is desirable.

Senior Research Fellow in the Centre for Advanced Study in Mathematics.

Ph.D. or evidence of equivalent published work.

5. Research Fellows (Rs. 500/- (fixed) p.m.)

(Commerce & Business Management-1, Mathematics-1)

Qualifications

Research Fellow in Commerce & Business Management

First or high second class M.B.A. or M.Com. or M.A. in Economics/Mathematics/Statistics/Operation Research/Master's Degree in Labour and Social Welfare/Social work with specialisation in Labour Relations and Personnel

Management/Master's degree in Industrial Management/Business Administration, with uniformly good academic record and aptitude for research work.

Research Fellow in Mathematics

M.A. in Mathematics with uniformly good academic record.

6. Junior Research Fellows

(Rs. 400/- (fixed) p.m. for the first/ two years and Rs. 500/- per month after assessment for the subsequent two years).

(Sociology-4, Centre of Advanced Study in Mathematics-6)

Qualifications

Junior Research Fellows in Sociology

Tenable for 1 to 4 years for M.Phil. and Ph.D. studies especially in the field of urban sociology and population studies.

First or high second class Master's degree in Sociology with good academic record.

Junior Research Fellow in Centre for Advanced study in Mathematics

M.A. in Mathematics with uniformly good academic record.

7. Research Scholars: (Rs. 400/- (fixed) p.m.).

(Physical Education-1, History-2, Sociology-1, Gandhian Studies-1, Commerce & Business Management-2, Mathematics-2).

Qualifications

Essential

First or high second class Master's degree in the relevant subject with bright academic record and aptitude for research.

Desirable

Research Scholar in Gandhian Studies

First or second class M.A. in any of the following subjects:-

Political Science; History; Public Administration; Sociology; Philosophy; Psychology.

Diploma in Gandhi Philosophy or proficiency in Gandhian Thought is desirable.

Research Scholars in Commerce & Business Management

First or high second class MBA or M.Com. or M.A. in Economics/Mathematics/Statistics/Operations Research/Master's degree in Labour and Social Welfare/Social Work with specialisation in Labour Relations and Personnel Management/Master's degree in Industrial Management/Business Administration.

8. Translators-2 (Hindi-1, Panjabi-1) (Rs. 350-25-600) (Directorate of Correspondence Courses).

Qualifications

(i) M.A. in the language in which the translation is to be done i.e. Hindi/Panjabi and

(ii) M.A. degree in any subject of Social Sciences

OR Should have practical experience of translation.

OR Should have a Diploma in Translation.

9. Teaching Assistants-2 (Rs. 300-25-600) (Grade is likely to be revised).

Qualifications

Essential

- I. A first or a high second class (with minimum 55% marks) Master's degree in Statistics of an Indian University or an equivalent qualification of a foreign university.
- II. An average of at least 55% marks in the B.A./B.Sc. and Intermediate/T.D.C. I examinations.

Desirable

1. M.Phil. in Statistics.
2. Aptitude for advanced study and research in Statistics.
3. Training in Laboratory Practicals in the areas of inference, Non-Parametric Methods, Multivariate Analysis, Dampling & Design of Experiments.
4. Experience of working on an Electronic Computer.
5. Experience of teaching/conducting practicals in Statistics.
6. Specialisation in any two of the following areas:
 - (i) Probability and Stochastic Processes
 - (ii) Non-Parametric Inference
 - (iii) Multivariate Analysis.
 - (iv) Combinatrocis.
10. **Research Assistants:** (Rs. 300-25-600) (Grade is likely to be revised) (Statistics-I, Mathematics-I)

Qualifications

Research Assistant in Statistics

Some qualifications as for the post of Teaching Assistant in Statistics mentioned at Sr. No. 9.

Research Assistant in Mathematics

M.A. in Mathematics with uniformly good academic record.

Candidates for the posts of Readers who do not possess a doctoral degree are required to submit 10 typed/cyclostyled copies of brief resume of their research/published work. 15% posts of Lecturers will be reserved for the members of the Scheduled castes and 2% for the members of the Scheduled Tribes, but these will be filled up by others if no suitable Scheduled Castes/Scheduled Tribes applicant is available. Persons who have already applied for the posts of Junior Lecturer-cum-Translators (one each in Hindi and Panjabi) in response to our advertisement No. 4/78 published in February, 1978 need not apply again. The nomenclature of these two posts stands changed to Translators. Eligibility will be determined as per qualifications now advertised.

Persons already in service should route their applications through proper channel. Incomplete forms and those received after the due date will not be entertained. Serving employees, may however, send their applications on the prescribed proforma direct to the University. They may route another copy through their Departments. They will be allowed to present themselves for interview only on the production of a 'No Objection Certificate' from their employers. Canvassing in any form will disqualify the candidate.

Application forms can be obtained from the Cashier, Panjab University, Chandigarh, personally on payment of Re. 1/- or by making a written request to the Finance & Development Officer, Panjab University, Chandigarh, accompanied by self addressed stamped envelope of 23x10 cms. and a postal order for Re. 1 drawn in favour of the Registrar, Panjab University, Chandigarh.

**GURU NANAK DEV UNIVERSITY
AMRITSAR**

Advertisement No. 10/78

Applications are invited for the following posts on prescribed form obtainable (free of cost) from office of the Registrar, Guru Nanak Dev University, Amritsar by making a written request accompanied by self-addressed stamped envelope of 23 x 10 cms. so as to reach this office by 10-7-1978 from persons residing in India and by 15-7-78 from persons residing in foreign countries alongwith crossed Indian Postal Order(s) for Rs. 7.50 drawn in favour of Registrar, Guru Nanak Dev University, Amritsar. Application fee is not refundable, Note: Persons already in employment must send their applications through their employers. Grade: (plus allowances as admissible under University rules)

1. Readers in History (Grade Rs. 1200-50-1300-60-1900)
2. Lecturers in History (Grade Rs.700-40-1100-50-1600)
3. Lecturers (temporary) for Job-Oriented Courses in Department of Chemistry (Rs. 700-40-1100-50-1600) in (i) Instrumentation (ii) Dyes and Dyeing Technology (iii) Paints and Varnishes (iv) Heat Treatment (v) Electroplating.

QUALIFICATIONS

For Posts of Readers in History : Good academic record with a doctoral degree or equivalent published work. Evidence of being activity engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials. About five years' experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding research work.

Specialisations: Modern Indian History, and Historical Thought and Historiography.

For posts of Lecturers (Sr.No. 2 & 3):(A) A Doctor's degree or research work of an equally high standard; and (B) consistently good academic record with Ist or high 2nd Class (B in the seven point scale) Master's degree in a relevant subject or an equivalent degree of a foreign University.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (B) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a consistently good academic record (weightage being given to M. Phil or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research Laboratory/Organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

EXPLANATION

Candidates for being eligible for recruitment to the posts of Lecturers must have a 1st or high 2nd Class (B in the seven point scale) at the Master's level and for determining consistently good academic record, average of 50-55% may be expected at the two examinations prior to the Master's degree examination.

Note: Knowledge of Panjabi and a foreign language other than English will be an additional qualification for the posts of Readers and Lecturers.

Specialization for posts of Lecturers in History: Medieval Indian, Modern Indian, and Modern Europeans History.

Specializations for posts at Sr. No. 3: For post at (i): M. Sc. (Technology) in Electronics/Instrumentation.

For post at (ii) M.Sc. (Technology) (Textile Chemistry) For post at (iii) M. Sc. (Technology) in Paints and Varnishes. For post at (iv) & (v) M. Sc. Engg. (Mechanical)

Additional Qualification for posts at Sr. No. 3 [(i) to (v)] : Teaching/Research/Factory Experience.

Note: Those who applied for Readership/Lecturership, in History in 1977 need not apply again.

**Mohinder Singh Randhawa
REGISTRAR**

**JAWAHARLAL NEHRU
UNIVERSITY**

ADVT. NO. Aca. III/7/78

Applications are invited for the following posts;

**SCHOOL OF INTERNATIONAL
STUDIES, NEW DELHI**

1. Associate Professor/Fellow or Assistant Professor/Associate Fellow in International Organization.

**Associate Professor/Fellow
Essential**

(a) Consistently good academic record with at least a high second class Master's degree in Political Science, History or Economics or its equivalent qualification from an Indian/foreign University (b) A Doctor's degree or published work of an equally high standard in the field of International Organisation; and (c) About five years' experience of teaching and/or research in International Organisation.

Desirable

Some experience of research guidance

in the field of International Organisation.

**Assistant Professor/Associate Fellow
Essential**

(a) Consistently good academic record with at least a high second class Master's degree in Political Science, History or Economics or its equivalent qualification from an Indian/foreign University; (b) A Doctor's degree or published work of an equally high standard in the field of International Organisation; and (c) Some teaching and/or research experience in International Organisation.

Note : a & b are for Assistant Professor
a & c are for Associate Fellow

2. Associate Professor/Fellow or Assistant Professor/Associate Fellow of Pakistani Studies

Essential

(a) Consistently good academic record with at least a high second class Master's degree in any of the Social Sciences or its equivalent qualification from an Indian/Foreign University; (b) A doctor's degree or published work of an equally high standard in the field of Pakistani Studies (c) About five years' experience of teaching and/or research in the field of Pakistani Studies (d) Knowledge of Urdu.

Desirable

Some experience of guiding research in South Asian Studies.

**Assistant Professor/Associate Fellow
Essential**

(a) Consistently good academic record with at least a high second class Master's degree in any of the Social Sciences or its equivalent qualification from an Indian/Foreign University; (b) A doctor's degree or published work of an equally high standard in the field of Pakistani Studies; (c) Some teaching and/or research experience in the field of Pakistani Studies; (d) Knowledge of Urdu.

Note : a, b & d are for Assistant Professor

a, c & d are for Associate Fellow

3. Associate Professor/Fellow or Assistant Professor/Associate Fellow of Nepalese Studies

Associate Professor/Fellow

Essential

(a) Consistently good academic record with at least a high second class Master's Degree in any of the Social Sciences or an equivalent qualification from an Indian/Foreign University; (b) A doctor's degree or published work of an equally high standard in the field of Nepalese Studies; (c) About five years' experience of teaching and/or research in the field of Nepalese Studies; (d) Knowledge of Nepali Language

Desirable

Some experience of guiding research in South Asian Studies.

Assistant Professor/Associate Fellow

(a) Consistently good academic record with at least a high second class Master's Degree in any of the Social Sciences or an equivalent qualification

from an Indian/Foreign University; (b) A doctor's degree or published work of an equally high standard in the field of Nepalese Studies; (c) Some teaching and/or research experience in the field of Nepalese Studies; (d) Knowledge of Nepali language

Note : a, b & d are for Assistant Professor

a, c & d are for Associate Fellow

4. Associate Professor/Fellow or Assistant Professor/Associate Fellow in American Studies (Leave Vacancy)

**Associate Professor/Fellow
Essential**

(a) Consistently good academic record with at least a high 2nd class Master's degree in one of the Social Sciences or its equivalent qualification from an Indian/Foreign University; (b) A doctor's degree in American Studies or published work of an equally high Standard; (c) About five years experience of teaching and/or research in the field of American History.

Desirable

(a) Some experience of teaching and guiding research in American Studies at the M. Phil. and Ph.D. levels; and (b) Publications in the field of Contemporary American History and Institutions.

**Assistant Professor/Associate Fellow
Essential**

(a) Consistently good academic record with at least a high 2nd class Master's degree in one of the Social Sciences; or its equivalent qualification from an Indian/Foreign University; (b) A doctor's degree or published work of an equally high standard; (c) Some Teaching and/or Research Experience.

Note: a and b above are for Assistant Professor

a & c above are for Associate Fellow

Desirable

Training in American Studies of at least the M. Phil or equivalent level; and Specialisation in Contemporary US economics or military or foreign policy issues.

5. Assistant Professor/Associate Fellow in South-East Asian Studies

Essential

(a) Consistently good academic record with at least a high second class Master's degree in one of the Social Sciences from an Indian/Foreign University; (b) A doctor's degree or published work of an equally high standard on a subject relating to Modern South-East Asia; (c) Some teaching and/or research experience

Note: a and b are for Assistant Professor

a & c are for Associate Fellow

Desirable

(a) Knowledge of Indonesian, Malay or Vietnamese; (b) Field work in South-East Asia for academic purposes; (c) About two years' experience of teaching and/or post doctoral research relating to Modern South-East Asia.

6. Assistant Professor/Associate Fellow of South Asian Studies

(Specialisation in Indian Foreign Policy)

Essential

(a) Consistently good academic record with at least a high second class Master's degree in any of the Social Sciences or its equivalent qualification from an Indian/Foreign University. (b) A doctor's degree or published work of an equally high standard in the field of Indian Foreign Policy; (c) Some teaching and/or research experience; and (d) knowledge of at least one of the South Asian Languages.

Note: a, b & d are for Assistant Professor

a, c & d are for Associate Fellow

Desirable

Some Teaching/research experience in the field of South Asian Studies.

**II. SCHOOL OF LANGUAGES,
NEW DELHI**

**7. Associate Professor/Fellow in Spanish
Essential**

(a) Consistently good academic record with at least a high second class Master's Degree in the relevant discipline OR its equivalent qualification from an Indian/Foreign University; (b) A doctor's degree or published work of an equally high standard; (c) About five years' experience of teaching and/or research.

Desirable

(a) A high degree of fluency in written and spoken Spanish; and (b) Sufficient experience of Post-Graduate level teaching of translation of commercial and technical texts and/or Spanish literature of the Golden Age.

8. Assistant Professors/Associate Fellows in Spanish

Essential

(a) Consistently good academic record with at least a high second class Master's degree in the relevant discipline or its equivalent qualification from an Indian/Foreign University;

(b) A doctor's degree or published work of an equally high standard; and (c) Some teaching and/or research experience.

Note : a & b are for Asstt. Prof.;

a & c are for Assoc. Fellow

Desirable

(a) A high degree of fluency in written and spoken Spanish; and (b) Experience of teaching Spanish, using language laboratory aids.

**III. SCHOOL OF SOCIAL SCIENCES,
NEW DELHI**

**9. Associate Professor/Fellow in Community Health
Essential**

(a) Consistently good academic record with at least a high second class degree in Medicine or an equivalent qualification from an Indian/Foreign University; (b) A doctor's degree on any aspect of community health or published work of an equally high standard; and (c) About five years' experience in developing inter-disciplinary approach to education, training,

research and consultation in the field of community health in India.

IV CENTRE OF POST-GRADUATE STUDIES, IMPHAL (MANIPUR)

10. Associate Professor/Fellow in Hindi Essential

(a) Consistently good academic record with at least a high second class Master's degree in Hindi or an equivalent qualification from an Indian/Foreign University; (b) A doctor's degree or published work of an equally high standard and (c) About five years' experience of teaching and/or research.

Desirable

Good background of comparative literature OR Good background of linguistics.

11. Assistant Professor/Associate Fellow in Hindi Essential

(a) Consistently good academic record with at least a high second class Master's degree in Hindi or its equivalent qualification from an Indian/Foreign University; (b) A doctor's degree or published work of an equally high standard; and (c) Some teaching and/or research experience.

Note: a, & b are for Assistant Professor

a & c are for Associate Fellow.

Desirable

Good background of Comparative Literature OR Good background of linguistics.

12. Associate Professor/Fellow or Asstt. Professor/Associate Fellow in Burmese Essential

(a) Consistently good academic record with at least a high 2nd class Master's degree in Burmese or its equivalent qualification from an Indian/Foreign University; (b) A doctor's degree or published work of an equally high standard; and (c) about five years' experience of teaching and/or research.

Desirable

Good background of Socio-linguistics and/or Tibeto Burman Linguistics.

Assistant Professor/Associate Fellow Essential

(a) Consistently good academic record with at least a high 2nd class Master's degree in Burmese or its equivalent qualification from an Indian/Foreign University; (b) A Doctor's Degree or published work of an equally high standard; and (c) Some teaching and/or research experience.

Note: a & b are for Assistant Professor
a & c are for Associate Fellow

Desirable

Good background of Socio-linguistics and/or Tibeto Burman Linguistics.

SCALES OF PAY

Associate Professor/Fellow Rs. 1200-50-1300-60-1900.

Assistant Professor/Associate Fellow Rs. 700-40-1100-50-1600.

plus usual allowances as admissible to the members of the staff in the Central Universities at New Delhi/Imphal.

Relaxation in any of the qualifications may be made (a) in favour of persons of eminence or of high academic/professional distinction, and (b) in exceptional cases where adequately qualified persons are not available but are otherwise found suitable for the respective positions. It will also be open to the University to consider the names of suitable candidates who may not have applied.

The selected candidates will be expected to participate in the teaching and research programmes in the concerned disciplines in other Schools of the University as well as in the programmes offered in their own Centres of Studies.

Normally appointment of Fellows and Associate Fellows is made on contract basis for a period ranging from one to three years.

Benefits of C. P. Fund-cum-Gratuity/G. P. Fund-cum-Pension cum-Gratuity are available as per University rules.

Persons already in employment should route their applications through proper channel.

Due consideration will be given to candidates belonging to SC/ST at the level of Assistant Professor/Associate Fellow.

Second class (mail) rail fare (both ways) will be paid to candidates invited to appear for interview from outstation by the shortest route subject to the production of rail receipt.

Applications, separate for each post, on the prescribed form, obtainable free of cost from the University by sending a self-addressed and stamped envelope of 23cm x 10cm size to the DEPUTY REGISTRAR (ACADEMIC) Jawaharlal Nehru University, New Mehrauli Road, New Delhi-110067, should reach him latest by 12-7-1978.

Candidates from abroad, applying for faculty positions, may apply on plain paper, (but their applications should reach the University by the last date) furnishing all the relevant information such as their names; date and place of birth; marital status; nationality; state of domicile; postal and permanent addresses; father's name and address; academic and professional attainments; full details of (a) publications, and (b) research projects undertaken; language(s) known; details of visits to foreign countries; and the names and addresses of at least two persons well acquainted with the candidates' professional work should also be requested by the candidate to forward to the DEPUTY REGISTRAR (ACADEMIC) confidential report concerning the candidate.

BANARAS HINDU UNIVERSITY

(Advertisement No. 3/1978-79)

APPLICATIONS are invited for the undermentioned permanent posts. The benefit of Provident Fund Pension, Dearness Allowances, House Rent Allowance and City Compensatory Allowances are admissible according to University Rules. The retirement age of University Employee is 60 years. The appointment will be made on two years probation on all permanent posts. Higher starting salary within the grade

is admissible to specially qualified and experienced candidates.

Applications will be entertained on the prescribed form duly supported with a Bank Draft or Crossed Indian Postal Orders for Rs. 7.50 in favour of the Registrar, Banaras Hindu University towards the application fee. Application forms alongwith the leaflet of information will be supplied free of cost by the Registrar (Selection Committee Section), Banaras Hindu University, Varanasi-221005 on receipt of Re. 0.55 paise stamped self-addressed envelope of 23 cm x 10 cm size. Candidates called for interview for these posts will be paid actual Railway fare by the Second class plus reservation charges for sleeper, is paid, and/or actual Bus fare from the present residence both ways by the shortest route as per University Rules. No other expenses will be paid.

Applications for each post be sent separately alongwith attested copies of certificates in support of the qualifications and experience mentioned in the application be addressed to the Registrar (Selection Committee Section), Banaras Hindu University, Varanasi-221005.

Incomplete application in any respect will not be entertained for consideration.

Those who are in service should apply through proper channel. M. O. or Cheque will not be accepted towards the application fee.

For the posts of Lecturers, other things being equal preference will be given to Scheduled Caste/Scheduled Tribes candidates who are considered fit.

LAST DATE FOR RECEIPT OF APPLICATION IS July 12, 1978

INSTITUTE OF MEDICAL SCIENCES

Grade: Rs. 700-40-1100-50-1600 plus N.P.A. as per rules admissible only to Medical Graduates.

1. LECTURER IN OBSTETRICS & GYNAECOLOGY (Two)

Qualifications Essential: (1) M.B.B.S. or equivalent qualification recognised by the Medical Council of India. (2) M.S./M.D. (Obst. & Gynaec.) M.O., M.R.C.O.G., Speciality Board of Obstetrics & Gynaecology. (3) Three years teaching experience as Tutor/Registrar/Resident in Obst. & Gynaecology of which one year should be after Post-Graduate qualification.

Desirable

(1) Research experience and publication in the subject.

2. LECTURER IN T.B. & CHEST DISEASES (One)

Qualifications Essential: (1) M.B.B.S. or equivalent qualification recognised by the Medical Council of India. (2) M.D. (T.B. & Chest Diseases), M.D./M.R.C.P. in Medicine with T.D. D., D.T.D. or D.T.C.D., (3) Three years teaching experience as Registrar/Resident in the T.B. & Chest Diseases of which one year should be after Post-Graduate qualification.

Desirable

1) Research & publications in the standard journals.

3. LECTURER IN SKIN & V. D. (One)

Qualifications Essential: (1) M.B.B.S. or equivalent qualification recognised by the Medical Council of India. (2) M.D. (Derm. & Ven.) or M.D. (Derm. Ven. & Leprology) or M.D. Derm. or M.D. (Ven. or M.A.M.S. (Derm.)). (3) Teaching experience three years out of which one year after Post-Graduate as a Resident or equivalent post.

Desirable

(1) Research and publications in the subject.

4. LECTURER IN PHARMACOLOGY (One)

Qualifications Essential: (1) M.B.B.S. Degree or an equivalent Qualification recognised by the Medical Council of India. (2) M.D. (Pharmacology) or Ph.D. (Pharmacology) (3) Three years teaching experience as Tutor or Demonstrator in Pharmacology of which one year should be after Post-Graduate qualification.

Desirable

(1) Research publication in the subject.

5. LECTURER IN SHALYA SHALAKYA (One)

Qualifications Essential: (1) A.B.M.S. Degree or equivalent basic qualification in Indian Medicine recognised by the University. (2) D.Ay.M. (Shalya) or equivalent Post-Graduate Degree or Ph.D. in Shalya. (3) Practical and Teaching experience in Anaesthesia for atleast three years.

Desirable

(1) Research experience and scientific publication in the subject and experience as Anaesthetist in Hospital.

INDIAN INSTITUTE OF TECHNOLOGY Kanpur-208016

Advertisement No 8/78

Applications are invited for the post of Physical Training Instructor Gr. I in the pay scale of Rs. 550-25-750-EB-30-900 in the Games & Physical Education Department at this Institute.

Qualifications

Graduate with Diploma in Physical Education or Bachelor's degree in Physical Education.

AND

Coaching certificate in Basketball from Netaji Subhas National Institute of Sports.

Minimum Experience

5 Years experience as PTI/Coach in a Govt. recognised institutions.

N. B. : 1) Preference will be given to candidates who have been active Basketball players at the State level.

2) Selection Committee can recommend appointment to the Lower post of Physical Training Instructor Gr. II in the scale of 425-15-500-EB-15-560-20-700.

Post is permanent and carry retirement benefits in the shape of CPF-cum-Gratuity Scheme or GPF-cum-Pension-cum-Gratuity Scheme as may be opted according to Rules. The age of retirement is 60 years. During the first year,

he appointment will be on probation. Besides pay, posts carry allowances according to the Institute rules, which at present correspond to those admissible to the Central Government employees stationed at Kanpur. Higher initial pay is admissible to exceptionally qualified and deserving candidates. Candidates called for interview will be paid second class railway fare from the place of duty to Kanpur and back by the shortest route.

Applications must be made on prescribed form obtainable free of charge from the Registrar of the Institute by sending a self addressed unstamped envelope of 25 cm. x 10 cm. size. Application should be accompanied by a postal order for Rs. 7.50 (1.87 for SC/ST candidates).

Applications should reach the Registrar, Indian Institute of Technology IIT Post Office, Kanpur-208016 (U.P.) on or before 10-7-78

HIMACHAL PRADESH UNIVERSITY, SIMLA-171005 Recruitment Branch Advertisement No. 3/78

Applications are invited for the following posts:

AGRICULTURAL COMPLEX

Department of Vegetable Crops and Floriculture

1. Floriculturist—1

(Applicants in response to Advt. Nos. 7/76 and 16/76 need send additional information only, if any).

Department of Botany and Plant Pathology

2. Assistant Mushroom Technologist (of two years duration)—1

Specialisation: Ph. D in Fruit Technology.

Desirable: Experience of canning of Mushroom.

3. Assistant Chemist (of two years duration)—1

Specialisation: Ph. D in organic chemistry or Bio-chemistry.

Desirable: Experience in analytical chemistry.

Department of Forestry

4. Assistant Agrostologist—1

Specialisation: Ph.D in Agronomy/Plant Breeding with specialisation in Agrostology.

Desirable: Experience of working in pasture and grazing land management and fodder trees development in the hills.

Department of Agricultural Economics and Farm Management

5. Assistant Professor of Agricultural Economics—1

UNIVERSITY EVENING COLLEGE

6. Lecturers in Commerce—3

Specialisation: Law and Accountancy.

Desirable: LL.B. or M.A. (Economics).

UNIVERSITY OFFICES

7. Registrar—1

8. Controller of Examinations—1

(Those who have already applied for posts at Sl. No. 7 and 8 in response to Advt. No. 5/77 dated 15.12.77 need not apply afresh).

UNIVERSITY TEACHING DEPARTMENTS

9. Assistant Professor of German—1

10. Museum Assistant in the Deptt. of Bio-Sciences—1

Pay Scales and Essential Qualifications
For Post at Sl. No. 1: Rs. 1200-50-1300-60-1900.

Ph. D or an equivalent degree; two years' post-graduate teaching or two years teaching of Honours Classes or post-doctoral research in a University or a Research Institute; and distinguished research work.

For Posts at Sl. No. 2 to 5 and 9: Rs. 700-40-1100-50-1600.

(a) Ph.D or an equivalent degree or published work of an equally high standard in the subject; and (b) having consistently good academic record with First or high Second Class (B plus) Master's degree in the subject concerned or in an allied subject, or an equivalent degree of a Foreign University.

For Post at Sl. No. 6: Rs. 700-40-1100-50-1600.

(a) M.Phil or an equivalent degree or published work indicative of capacity for independent research work; and (b) having consistent good academic record with First or high Second Class (B plus) Master's degree in the subject concerned or an allied subject, or an equivalent degree of a Foreign University.

Provided that the Executive Council may, if necessary, relax any qualifications at (b) above on the recommendations of the Vice-Chancellor or the Selection Committee, as the case may be, if the research work of a candidate as evident either from his thesis or from his published work is considered to be of a very high standard:

Provided further that a candidate possessing a consistent good academic record may be appointed, if a candidate with qualifications at (a) above is not available or is not considered suitable, on the condition that he will have to attain the required qualifications within five years of his appointment, failing which he shall not earn future increments until he fulfils the conditions.

Explanation: Consistent good academic record means overall record of all assessments throughout the academic career leading to the Master's degree should atleast be B plus or high Second Class.

For Post at Sl. No. 7 and 8: Rs. 1500-60-1800-100-2000.

Master's degree in any Faculty, with five years' experience as a Principal in a College affiliated to or maintained by a University.

OR

Teaching experience as a Reader in a University for atleast five years.

OR

Master's degree in any Faculty, with five year's experience as a Deputy Registrar or in an equivalent post in a University or a Board of School Education.

OR

Master's degree in any Faculty, with five years' administrative experience in the Central or a State Government

Administrative Service (on deputation, if necessary).

OR

Master's degree in any Faculty, with five years' managerial experience in an autonomous corporation or public undertaking.

OR

Master's degree in any Faculty, with five years' experience at the bar.

For Post at Sl. No. 10: Rs. 160-10-280/15-400.

Passed B.Sc. examination with Biology of a recognised University. He should know the work relating to a biological museum such as taxidermy, preparation of museum specimens, skeletal preparations, preparation and management of herbaria etc., experience in recognised institutions. Age limit 18-30 years.

In case of selection and appointment to the above posts, the person concerned will have to serve the University at least for a period of two years.

The above scales carry with them

usual allowances and benefit of C.P.F./G.P.F. etc. in accordance with the rules of the University.

Higher start in the grade is admissible on the basis of special qualifications and experience.

For Posts at Sl. No. 2 to 5, 6 and 9, preference would be given to Scheduled Castes/Scheduled Tribes candidates, who are considered fit.

Applications should be made on the prescribed form obtainable from the Registrar by sending a self-addressed envelope (size 23×10 cms) and applications complete in all respects together with a crossed postal order of Rs. 7.50 (not applicable in case of those applying from outside India and for post at Sl. No. 10), drawn in favour of the Finance Officer, Himachal Pradesh University, should reach the undersigned by the 7th July, 1978. A person applying for more than one post should send a separate application for each post.

A.S. Bajwa
REGISTRAR

INDIAN INSTITUTE OF TECHNOLOGY

Kanpur-208016

Advertisement No. 14/78

Applications are invited for the preparation of a panel of 15 Teachers in the Campus School to fill up short term vacancies on a consolidated salary of Rs 400 pm on a purely temporary basis. Those interested and possessing following qualifications may apply.

Bachelor's Degree with B.Ed/B.T. or Montessori Training/Diploma in Child Education or 3 years Diploma/Certificate in Art or Bachelor's Degree in Music/Physical Training. Proficiency in written as well as spoken Hindi and English.

Out of a panel of 15 Teachers, 3 posts are reserved for Scheduled Caste and 1 for Scheduled Tribe. The qualifications may be relaxed by the Selection Committee in case of Scheduled Caste and Scheduled Tribe candidates.

Applications on plain paper giving full particulars of qualifications and experience should be sent to the Registrar, Indian Institute of Technology, Kanpur by July 7, 1978.

Higher Education in Bihar

(Continued from page 1019)

largely on the prospect of promotion. This prospect of future promotion is not available in affiliated colleges. The teachers in these colleges generally retire in the scale of pay they join. It is heartening to note that in phases the State Government have decided to convert the affiliated colleges into constituent ones. But even in constituent colleges and university departments there are only a few posts of Readers and University Professors and hence the promotion is difficult and talented teachers get frustrated. The conditions, however, have now been improving slowly.

The broad strategy for the perspected plan of higher education should be the following (a) As indiscriminate private colleges have resulted in the deterioration of educational standards it is suggested that appropriate standard should be drawn up and strictly adhered to before any college is affiliated to the university; (b) The number of seats in colleges and university departments need to be changed, keeping in view the man-power needs of the economy and principles of social justice; (c) Courses offered at colleges and postgraduate departments should be prepared in conformity with socio-economic needs which should be reviewed periodically, say at the interval of every five years; (d) The University Service Commission should have powers to impose its decision in matters of appointment of lecturers and principals in affiliated colleges. The present system of sending a panel of names by Commission to the affiliated colleges authorities should be scrapped and the Commission should clearly indicate who should be appointed to what post. The University Service Commission may be given the power to select Lecturers, Readers, University Professors and Principals

of constituent colleges also. Presently this part of the function is being performed by the Bihar Public Service Commission. Since the University Service Commission consists of academicians, there is no harm in delegating this power of selection of personnels for constituent colleges to this august body; (e) The Service Conditions of the affiliated college teachers must be improved. Their fate should no longer be left in the hands of the governing body and the payment of their salary should be through the cheque system. Promotion should be on the basis of past academic achievements, publication of research papers and books. If best brains are to be attracted and retained in the field of higher education, various incentives and facilities (such as rich libraries, reasonable work loads provision of more superior posts such as Readers and Professors) have to be provided even in constituent colleges and university departments; (f) There should be more emphasis on research, seminars and refresher courses. Reorientation programmes should be held frequently for the inservice training of the college/university teachers; (g) In order to reduce the large rush to university for higher education, it is suggested that technical/vocational trade schools should be expanded. With diversification of the courses and vocationalisation of education at the middle/secondary stage a considerable stream of students could be diverted; (h) Actual field/applied works in rural or industrial areas should be made an essential part of the university degree requirements in each faculty for inculcating the dignity of labour in graduates on the one hand, and for examining their competence of applying their theoretical knowledge to the practical problems on the other.

[Courtesy : The Indian Nation]

ALIGARH MUSLIM UNIVERSITY

Advertisement No. 13/78-79

Applications, on the prescribed form, are invited for the following posts:

Candidates must possess Medical Qualification, included in 1st or 2nd schedule or part II of the 3rd Schedule (other than licentiate qualifications) of the Indian Medical Council Act, 1956. Holders of educational qualifications included in Part II of 3rd schedule should fulfil the conditions stipulated in Section 13(3) of the Indian Medical Council Act, 1956. Must possess a basic University or equivalent qualifications entered in Schedules under State/Central Medical Registration Act.

1. Reader in Microbiology (Mycology). Scale Rs 1200-50-1300-60-1900 plus allowances.

Qualifications

M.D. (Bacteriology)/M.D. (Microbiology)/M.D. (Bacteriology with Pathology)/M.D. (Pathology & Bacteriology)/M.Sc. (Bacteriology)/M.Sc. (Microbiology) / Ph.D. (Bacteriology) / Ph.D. (Microbiology)/D.Sc. (Bacteriology)/D.Sc. (Microbiology).

Experience

As Assistant Professor/Lecturer in Bacteriology for three years in a Medical College.

Desirable

Published work in Mycology.

2. Lecturer in Microbiology (Virology), Scale Rs 700-40-1100-50-1600 plus allowances:

Qualifications

M.D. (Bacteriology)/M.D. (Microbiology)/M.D. (Bacteriology with Pathology)/M.D. (Pathology & Bacteriology)/M.Sc. (Bacteriology)/M.Sc. (Microbiology) / Ph.D. (Bacteriology) / Ph.D. (Microbiology)/D.Sc. (Bacteriology) / D.Sc. (Microbiology).

Experience

The requisite recognised Postgraduate qualification in the subject and three years teaching experience as Tutor/Demonstrator in Bacteriology/Clinical Pathologist/Resident Pathologist of which one year should be after post-graduate qualification. Experience in Virology.

Desirable

Published work in Virology.

3. Lecturer in Microbiology (Immunology), Scale Rs 700-40-1100-50-1600 plus allowances:

Qualifications

M.D. (Bacteriology)/M.D. (Microbiology)/M.D. (Bacteriology with Pathology)/M.D. (Pathology & Bacteriology)/M.Sc. (Bacteriology) / M.Sc. (Microbiology) / Ph.D. (Bacteriology) / Ph.D. (Microbiology) / D.Sc. (Bacteriology)/D.Sc. (Microbiology).

Experience

The requisite recognised Postgraduate qualification in the subject and three years teaching experience as Tutor/Demonstrator in Bacteriology/Clinical Pathologist/Resident Pathologist of which one year should be after Post-graduate qualification. Experience in Immunology.

Desirable

Published work in Immunology.

4. Reader in Pathology. Scale Rs 1200-50-1300-60-1900 plus allowances—One Plan Post and one general post.

Qualifications

M.D. (Pathology), M.D. (Path. & Bact.) M.D. (Path. with Bact.), M.Sc. (Medical Path.), Ph.D. (Path.) D.Sc. (Path.). Speciality Board of Pathology (USA) M.R.C. Path. (Lond.) M.C.P. (Australia). After Examination. As Assistant Professor/Lecturer in Pathology for 3 years in Medical College.

Desirable

Aptitude for research in the field.

For Plan Post: Having experience of working in Chemical Pathology.

For Gen Post: Having experience of working in Haematology and Immunology.

Prescribed application forms and instructions may be had from the Deputy Registrar (Executive) either personally or by sending a self-addressed envelope of 23 x 10 cm. Last date for receipt of applications is 8th July 1978. Incomplete applications and those received late may not be considered.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T.A. equal to one single Second Class Railway fare only.

Jamalur Rahman
REGISTRAR

LUCKNOW UNIVERSITY

Advertisement No. 11/1978

Applications are invited from candidates possessing a graduate degree in Medicine included in the Schedules of the Medical Council of India Act, 1956 with a good academic record and post-graduate degree in the subject concerned (M.D./M.S., Ph.D./D.Sc./F.R.C.S., M.R.C.O.G. or equivalent) for the following posts in the K.G. Medical College, Lucknow:

Professor in the grade of Rs. 1200-50-1500-60-1800 (Subject to revision)

1. One Professor of Social and Preventive Medicine.

Candidates must possess five years' teaching experience in the subject concerned as Reader or in an equivalent post.

Readers in the Grade of Rs. 800-50-1450 (Subject to revision) Plus D.A. as Admissible under the rules.

2. One Reader in Bio-Chemistry in the Department of Physiology.

Candidates must possess three years teaching experience in the subject concerned as Lecturer or in an equivalent post. Persons not possessing a graduate degree in Medicine, but possessing a first or high second class M. Sc. degree in Organic Chemistry or Bio-Chemistry, with a good academic record and Ph.D. or D.Sc in Organic Chemistry or Bio-chemistry, will also be eligible.

Lecturers in the Grade of Rs 650-30-800-40-1000-50-1300 (Subject to revision) Plus D.A. as admissible under the rules.

**3. One Medical officer of } in the De-
Health, Maternity and } partment
Child Welfare-cum-Lec- } of Social &
turer. } Preventive**

**4. One Asstt, Public Heal- } Medicine.
th Engineer-cum-Lecturer. }**

5. One temporary Lecturer-cum-Clinical Psychologist in the Department of Psychiatry.

6. One temporary Lecturer-cum-Dental Liaison Officer in the Department of Plastic Surgery.

Candidates must possess three years' teaching experience as Tutor, Registrar, Resident, Demonstrator or in an equivalent post.

For post No. 4, candidates must be (i) B.E. (Civil Engineer) or equivalent and possess (ii) Post-graduate qualifications in the Subject (Master in Public Health Engineering) or equivalent.

For post No. 5, persons not possessing a graduate degree in Medicine will also be eligible provided they possess postgraduate (M.A.) in Psychology with Diploma in Clinical Psychology.

GENERAL

For purposes of qualifications required for the above posts, the degree obtained in a subject taught in a Department which subsequently is constituted into a separate Department, shall be deemed to be a degree in the subject concerned for the newly constituted Department. For posts in sub-specialities, special training and/or experience in the sub-specialities concerned, will be an additional essential qualification.

Relaxation in the prescribed qualifications may be made in exceptional circumstances in accordance with the Ordinances.

No consulting/private practice is allowed but the incumbents possessing Medical Degrees' qualifications, will be given 50% of the pay as non-practising allowance subject to a maximum of Rs. 600/- p.m. on the condition that the total emoluments including the non-practising allowance, will not exceed Rs. 2,700/- per month.

It is not necessary to fill all/any of the advertised posts.


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A CHRONICLE OF HIGHER EDUCATION & RESEARCH JULY 16, 1978 80 PAISE

State Education Ministers meet in New Delhi



The Prime Minister, Mr. Morarji Desai, inaugurating the State Education Ministers Conference in New Delhi. On his left is Dr. P. C. Chunder, Union Education Minister.

**INDIAN INSTITUTE OF
TECHNOLOGY, KANPUR
KANPUR-208016**

Advertisement No. 16/78

Applications are invited for the posts of Technical Officer (Foreman Selection Grade), Senior Technical Assistant and Technical Assistant in the pay scale of Rs 650-30-740-35-810-EB-35-880-40-1000-EB-40-1200, Rs 550-25-750-EB-30-900 and Rs 425-15-500-EB-15-560-20-700 respectively in the Advanced Centre for Material Science at this Institute.

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DIRECTOR

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Any of the above qualifications may be relaxed by the University.

Other things being equal, 16.2/3 per cent and 7½ per cent posts are reserved for SC/ST candidates, 10 per cent posts are reserved for Ex-servicemen and 1 per cent for physically handicapped persons.

Post at No 2 will be offered on contract for 3 years in the first instance. Both ways second class (Mail) rail fare is payable to the candidates invited to appear for interview from outside Delhi by the shortest route subject to production of rail-receipt. Persons already in employment should route their applications through proper channel. Benefits of Provident Fund-cum-Pension-cum-Gratuity or Contributory Provident Fund-cum-Gratuity and CGHS are admissible.

Applications on plain paper stating Name, Date of Birth, Address, whether SC/ST/Ex-servicemen etc., Educational Qualifications (with division, year of passing, University), details of experience, nature of duties performed, pay currently drawn etc., should reach DEPUTY REGISTRAR (ADMN.), Jawaharlal Nehru University, New Mehrauli Road, New Delhi-110067 latest by 31-7-1978.

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*Opinions expressed in the articles
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not necessarily reflect the policies
of the Association*

Hony. Editor : ANJNI KUMAR

Investment in Higher Education

Navin Chandra Joshi

In a developing country, investment in higher education is critical for determining the rate of its economic growth. In the totality of economic planning, a rational allocation of resources demands comparisons of benefits from educational expenditure with that from expenditure in other sectors.

It is therefore necessary that the allocation of national income must bring about a kind of balance between physical output and investment in education. This would ensure an optimal utilisation of resources spent on education.

The Plan allocations for education in India have been 7.9 per cent of the total developmental outlay in the First Plan, 5.8 per cent in the Second Plan, 6.9 per cent in the Third Plan, 4.1 to 5.3 per cent in the annual plans during 1966-69, 5.1 per cent in the Fourth Plan and 3.3 per cent in the Fifth Plan.

More than the allocation of expenditure on education, it is important that education justifies itself on its economic return to the community. In other words, investment in higher education demands higher contribution by the beneficiaries towards the total cost. Education being a social investment, more should be spent on it if it brings about an increase in the rate of economic growth.

Although even with chronic unemployment in the country, the social opportunity cost of education is not zero, yet we should not allow higher education in fields which are not related to the stage of our economic development. Wasting our scarce resources on fruitless explorations in the name of higher education is not only callous but also disastrous.

Mr Jayaprakash Narayan's recent suggestions to the Government on the issue of education in this country are highly pragmatic and substantial. Serious thinking and implementation need to be accorded to the suggestions before further damage is done by the present ill-conceived pattern of education, particularly at the higher level, in this country.

Among other things, he said that "there is a woeful duplication and dead uniformity in the teaching programmes of our universities regardless of the varying problems of the communities they claim to serve. For instance, there is no reason why precious resources should be wasted in each university trying to run small understaffed departments for certain subjects which attract only a handful of students. It would be more sensible of them to

evolve a co-ordinated programme for imparting instruction and offering research facilities of a higher order with adequate staff and libraries by dividing among themselves such subjects so as to avoid duplication."

JP goes on to add that "nearly one-third of the total outlay on education in India is spent on higher education, which reaches about 10 per cent of the appropriate age-group. This means that it is mostly the children of middle and upper classes who benefit at the cost of 90 per cent of the people of this country. This is not only unjust, it also helps perpetuate gross inequalities in income and social status which are directly related to levels of education.

JP rightly suggests that all higher education should be made self-financing through fees and private donations. Students coming from economically backward families but having an aptitude for higher education should be given adequate loan scholarship which may be recovered in easy instalments after they begin to earn. Such a system of loan scholarships is in force in certain countries.

It is true that it will need a high degree of organisation and a special effort on the part of the government, local authorities and managements of educational institutions to make the system work satisfactorily. JP is confident that the only way for making higher education more egalitarian is by distributing its costs among those who benefit by it.

It is necessary to devise methods for measuring the cost of education and its returns to the individual concerned. By and large, higher education increases one's expectations for higher earning. It is also true that earnings at different levels are not solely the result of formal education. They reflect factors like training, experience ability, intelligence and so on.

But then, today in this country we are having that kind of university education which does not give jobs to 85 per cent of people who have the highest degrees. At the same time, it is also worth noting that the principal beneficiaries of higher education are the elite, upper middle and middle classes while its cost is borne by the poor tax-payer. The Government has to incur about Rs 1,000 a year to educate a university graduate in general education. Education accounts for almost a third of the government's social service expenditure in India.

Investment that goes to create a literate and disciplined labour force out of illiterates may yield a much larger productivity than what may be available from a university degree holder. By the same token it would be a more sensible planning if the present trend for locating universities in urban areas is halted and rural universities, whose pattern has been set out in the Report of the University Education Commission, be established. They should not only be located in rural areas but their education should centre round rural problems and for teaching in them, the services of top cadres in rural development should be availed of.

What is needed in higher education is not more money for education but strong action to end all subsidy for education in urban areas in order to divert it to the 'grass-root' education in rural areas where the return on educational expenditure is extremely high.

It is also appropriate that the income foregone by students should be added to the resources used in providing formal education for calculating the total annual investment in education. Including income foregone would involve consideration of approximations and take the concept of national income away from its origin as a measurable flow of money in the economy. If we include the opportunity cost to the cost of education, it would be necessary to include it as well in the cost of other sectors of the economy. A less intriguing method will be to measure expenditure on education and its return as derived from estimates of people's earnings.

Prospects of employment opportunities have a powerful influence on the decisions to invest in education. Pigou believed that productivity of education is higher than the productivity of physical capital. Theodore Schultz delineates on the contribution of education to human economic welfare in terms of its direct and indirect benefits. The direct returns are measured by assessing the returns to individuals while indirect benefits are analogous to the external economies that the educational system creates in the form of various public services.

While Edward F. Denison's analysis shows that in the USA, there has been a growth of 23 per cent in real national income through education, Schultz found that investment in education contributed 3.5 times more than the investment in physical capital. These conclusions may be disputed for methodology adopted in their calculation but they do focus on the fact that education contributes to national output through improvement in the quality of human resources.

It is, however, also possible that there is no casual relationship between education and income. In a socialist society where all incomes are equal, education will give no direct return. The indirect benefits of education to the society may be greater than their direct benefits to those who received education.

Jayaprakash Narayan has suggested that opportunities for higher education should be related to employment opportunities. "Such employment need not carry with it the high levels of income to which professional people are at present accustomed in India. What is necessary is to ensure salary levels which are in harmony with a well-conceived incomes policy. Such a policy is difficult to work out in the best of circumstances but if our commitment to distributive justice in the context of economic development is not a piece of rhetoric, every group in Indian society will have to accept a reasonable incomes policy".

[Courtesy : The Hindustan Times]

Role of Varsities in making the Adult Literate

N. N. Prahallada*

Adult education in our country has given rise to much discussion, speculation and enquiry. One could see that there have been many conferences and debates on this issue and a large number of opinions and comments are coming in.

Recently, our Prime Minister and Union Education Minister have declared that the highest priority needs to be given to adult education. As a result, the Union Government has launched a comprehensive, National Adult Education Programme known as NAEP which will come into force from October 1978.

Even after 30 years of Independence we are unable to achieve the expected target in the field of education. What may be the reason and whom should we blame for this state of affairs? In my opinion, it is due to the lack of interest and initiative on the part of the administrators, teachers and to some extent, students.

Our system of education has come under the wheel of too many committees and commissions since 1854 down to 1964-66. Very recently two more committees have been added and they are Dr Ishwarbhai J. Patel and Dr Adiseshiah committee.

In our country, we have experts who can prepare very good schemes. The major drawback is in the implementation of programmes. Everyone blows his trumpets on the platform, but when the question of implementation comes, they look to someone else to implement the programme. This is why we could not achieve the expected progress in adult education.

It should be noted that we cannot have real democracy, until and unless we have educated, enlightened citizens. We should inculcate social and political awareness among our adults especially in villages. Adult education can play a vital role in this direction. We should plan our policies and programmes in such a manner that it should help in the upliftment of the rural people.

Further, all importance should be given to universalisation of elementary education and adult literacy, since both are interdependent.

Adult education should never confine to the teaching of the three R's only but it should constitute literacy, dialogue and action. It should help the adults to improve their economic condition and living standards.

According to Lyman-Bryson, "adult education covers all the activities with an educational purpose

on the part of the people engaged in the ordinary business of life. Purposeful efforts towards self-development carried on by an individual in all the three aspects of his life—his work, personal life and his contribution to society as a citizen constitute an essential ingredient of adult education.

Universities can play a major role in promoting adult education through its planned strategies. It can adopt a number of villages for spreading adult education. It is highly desirable that every university should have an adult education wing attached to it. Opportunities should be given to the students to meet villagers, study and help in solving their problems.

Proper mass-media should be used to communicate and enlighten the village people about adult education programmes.

Universities may start correspondence courses, evening courses, vocational courses and summer institutes to stress the significance of adult education.

Every university in India should direct its teacher-training institutes to take up the task of promoting adult education in rural and urban areas. In this direction the Regional College of Education, Bhopal, has prepared a master plan to adopt a village nearby to educate adults.

We can ask school teachers, students including NSS workers, village youths, ex-servicemen, voluntary and social workers to function as instructional agencies.

All State Governments should evince keen interest in promoting the right type of adult education.

The press, the public and those who are in the profession should feel that it is their serious business to disseminate adult education. The concept of "Each one teach one", "Each one teach ten" and make the home literate, should be strictly practised. Further the fruits of adult education must reach the doors of everyman how-so-ever poor in all villages.

If the universities were to take up the implementation of the adult education programmes seriously, we can definitely see phenomenal changes in the behaviour of our adults.

Lastly, for a complete success of any programme what is more important is the right type of co-operation. Therefore villagers must cooperate with the adult education workers in order to build up a new rural India with enlightened and responsible citizens.

[Courtesy : The Hindu]

*Lecturer in Education, Regional College of Education, Bhopal.

English in University Syllabus

Recent trends in higher education tend to exaggerate the usefulness of the sciences, economics, mathematics, statistics, history, geography, but minimise the utilitarian value of English language and literature. It is a result of misdirected thinking and prejudice. The prejudiced attitude is attributable to a historical phenomenon which was an accident. It just happened that India was ruled by the British for 150 years and that English was their mother-tongue. Therefore English is regarded today as the language of India's past rulers. But it also happened that English gradually acquired the status of a world language.

When events occur in a manner which is beyond one's control, it is futile to keep questioning how or why it should have happened. It just happened. An unfortunate accident which occurred was that no one Indian language which is a vestige of India's political and historical past has continued to be the common language of the country.

The best way, perhaps, to settle this issue is to quickly make up our minds, with good enough reasons, as to which one of the sixteen independent Indian languages should replace English, and diligently set about cultivating and developing it and its literature by means of education, the creative efforts of writers, and legislation promoting its frequent use. For then the importance of English will perforce diminish and a fully developed Indian language, serving the needs of modern India, will take its place. But it is a different problem from the treatment of English when it is a subject in the university syllabus.

To include a subject in the university curriculum is to imply that it will be studied at a considerably advanced level which will make it worthy of a bachelor's or master's degree. It means that the study of the particular subject will be a challenging intellectual experience and that its highest utility will be the kind of discipline and training that it will provide for the mental faculties of the student to develop.

English or any language like Hindi, Marathi or Gujarati, if taught at the university level, will basically imply that the students, who offer it, will have the necessary linguistic and intellectual equipment to tackle the difficult texts and write qualitatively good answers on their various aspects. It will also mean that having undergone training at a high level, they would be able to teach the subject competently, insisting on good standards, write on it in an original way, contributing ideas and observations through books and articles, be in touch with others in foreign countries who have specialised in the same subject

and thereby contribute effectively to the intellectual, social and cultural life of the nation.

These are some of the most important implications of, in fact, every subject without exception, which is studied at the university level. The study of English language and literature is no exception. Therefore to deliberately simplify courses in English in order to make them manageable for qualitatively indifferent teachers and students on the basis that English is a foreign language to have demanding standards for science, economics, mathematics and others, but meagre ones for English, to considerably lower the percentage for a pass, to prescribe hackneyed and unchallenging texts year after year to reduce the number of periods of instruction, and finally, to cut down library grants for the English section on the false assumption that it is waste of money to purchase books on English literature as it is foreign matter, is to be biased and grossly unjust.

If English, like any other subject, is to be taught at the university it must have equal attention, dignity and importance. Its study must be encouraged like that of any other subject. The present trend is to give it a half-hearted treatment prompted by passion and prejudice. By permitting a widespread incorrect use of it, the language is mutilated while its literature is diluted by simplifying the texts in various ways.

In any learning process, basic correctness is always aimed at. In the teaching and learning of English at the university level, literary study, scholarship and research are its basic implications as they are of the study of any language like Hindi, Marathi, Gujarati, French or German. Nothing in this direction is accomplished, however, save constant discouragement of qualitative excellence. It is due to the absence of planned courses and of a working schedule which does not accommodate adequate number of seminars, discussions and tutorials. Instead there is heavy emphasis on language study of an elementary nature, involving endless administrative difficulties, hackneyed texts for superficial literary study, and thoughtlessly simplified courses.

The ostensible reason for it all is that the study of English is of no use, and that it should disappear altogether within two or three years at the university level. The question is why should this happen? If French, German, Marathi, Gujarati, Politics, History, and a host of other subjects remain in the university syllabus, why not English? Even if the medium of instruction at the university level be an Indian language, why should English not continue to be studied as a subject? It is done in the African universities, in those of Japan, France, Sweden, Denmark, Finland, Germany, where the departments of English have produced some of the finest scholars and scholarly works, and made contributions at international level to the study of English language and literature. Why should Indian universities not be capable of equally fine achievements through their departments of English in the years to come?

[Courtesy : The Hindu]

CSIR organises Centre for the Study of Science, Technology and Development

Science and technology have come to play a major role in social and cultural transformation and in economic development. Most of the studies available on the relationship of science and technology deal with the problems in the context of recent developments in Europe and America. In other words, they present a study of the historical process of development of science and technology in the advanced world. They are not amenable to mere replication in the developing countries which have special problems of their own carried over from their not too distant colonial past. It is necessary and desirable to investigate the nature of this relationship in the historical and cultural perspective of the developing countries. It was in this perspective that a proposal for setting up an Institute for Science, Technology and Development was discussed in 1972 at a meeting of the inter-ministerial secretaries under the chairmanship of Shri C. Subramaniam, the then Minister for Industrial Development and Science and Technology. It was agreed that initially a small nucleus may be established. The Centre for the Study of Science, Technology and Development (CSSTD) was subsequently set up at C.S.I.R. in August 1973.

The major areas of work of the Centre are:

- (a) Technology Assessment and Alternative Technologies.
- (b) Planning of Science and Technology.
- (c) Dynamics of Science, Technology and Society.
- (d) Scientific and Technical Manpower.

In addition to the above four major areas of work, some studies on the creativity and research productivity of S&T personnel and on the historical development of science and its social role in different societal, cultural and national contexts are also taken up for study.

The Centre provides facilities to scholars both from the developing and the developed countries

and to students willing to undertake research on any one area of study as given above. The Centre has active research collaboration with the Department of Operation Research, University of Delhi, Department of Sociology, Haryana Agricultural University, Hissar and Birla Institute of Technology and Science. It undertakes joint project and research programmes in the areas given above with other institutions all with individual scholars working in various institutions other than those given above, who cannot be physically present at the Centre to carry on research. In all such programmes, the Centre renders all possible financial assistance to the institutions/individuals for a period ranging from one to two years. At present there is one project going on at the SNDT University at Bombay and Department of Sociology, University of Poona.

Being a multi-disciplinary organisation, the Centre thought it very essential to build up a viable information system to meet the information needs of users both in India and the developing countries. Therefore, at the time of inception, the Centre established an Information Unit (I.U.). In fact, the idea of creating such a viable Information Unit to be attached with such an organisation was first emphasised in a specific recommendation of the International Summer School on Science Policy Studies in collaboration with UNESCO and CSIR held at New Delhi, in July 1973. At present, I.U. essentially meets the information needs of management of CSIR, researchers and faculty staff at the Centre and similar centres and individuals working in this area in the country. During the last few years, the I.U. has been engaged in the following activities:

- (a) Collection, Processing and Storage of Information

The documents received at the Centre are processed and disseminated in the form of a monthly list to all the members of the Centre

and other interested researchers in the country. This information in the list is classified on the basis of a standard classification recommended by SPINES.

- (b) Preparation of Country Reports

The IU has been preparing both short and detailed reports on developing and other countries particularly of these countries, with which CSIR has bilateral exchange agreements. These country reports contain information on their economy especially on their exports and import, trade; science and technology policies; structure of R&D institutions; financing of R&D; manpower potential and educational system etc. In addition to descriptive text, it also contains statistical tables, list of scientific institutions and a comprehensive bibliography.

The main object of this exercise is two-fold; firstly to help the decision-makers in identifying areas of collaboration, and secondly to give first-hand knowledge about status of science and technology to those scientists who are visiting them under exchange and bilateral programmes. These reports are prepared on a standard format. In fact, there is a great need and demand of such reports on developing countries because information in this area is completely missing although some efforts have been done by UNESCO in generating reports by organising some seminars, conferences and workshops in the area of science policy. So far the IU has prepared the following detailed country reports: Japan, Czechoslovakia, Hungary, Poland, GDR, Romania, Indonesia etc. Short country reports have also been prepared on countries like Iran, Turkey, Austria, Mexico, Nigeria etc. In addition, a country report by India was also prepared for UNESCO.

- (c) Current Literature on Science of Science (CLOSS)

This is a monthly journal brought out by the Centre since its inception. This started initially as an Indexing service in cyclostyled form under the title "Index to the Literature on Science of Science" in 1965 by Planning Group of CSIR, of

which the present CSSTD is an off-shoot. It remained as an indexing service until 1972 and later it has completely changed its character, scope and coverage, format and title. The present journal is brought out as an abstracting service in the printed form. It covers sections on digests, abstracts, news and notes, R&D statistics and special bibliography. The last section has been initiated since 1976. The coverage of the journal has been extended to cover all the major science policy journals and other relevant journals from developing countries.

The classification previously followed in the journal was the alphabetical arrangement of entries under both major subject headings and country heads. From 1977 onwards, it has shifted to SPINES classification. At present CLOSS is only abstracting service in English in the area of science policy in the world and it is circulated to all the leading science policy institutions in the world. In fact, developing countries are encouraged to subscribe this journal free of cost in the beginning. The present circulation of this journal is 1000. During the last few years, this journal has made a considerable impact on the dissemination of R&D data and information in the area of science policy both in India and abroad. This has been confirmed by a study conducted about the utility of CLOSS. About 800 questionnaires were sent to users, of which 40 per cent replied.

(d) Bibliographies

The IU has been preparing number of technical bibliographies from time to time on the: (i) areas in which projects are undertaken; (ii) major areas of science of science; and lastly on problems of science of science in developing countries. So far the following bibliographies have been prepared under the above three categories:

Category-1

- (i) Technology assessment;
- (ii) Technical assistance to scientific research in developing countries;
- (iii) Communication in R&D;
- (iv) Productivity and performance in R&D;
- (v) Creativity and Psychology of researchers.

Category-2

- (i) R&D Management;
- (ii) Technological forecasting;
- (iii) Appropriate Technology;
- (iv) Science and Society.
- (v) Social dimensions of S&T.

Category-3

- (i) Science policy studies in developing countries;
- (ii) Science policy studies in India;
- (iii) Brain-Drain in the Third World;
- (iv) Transfer of Technology in developing countries;
- (v) Work done in developed countries on science policy problems in developing countries;
- (vi) S&T in China;
- (vii) Alternate sources of energy in India.

(e) Technical Reviews and Bibliographical Surveys

The various researchers are also involved in preparing reviews on various areas of science of science. These reviews are published in various science policy journals in India and abroad. Detailed bibliographic surveys are also undertaken whose objectives are not mere preparation of bibliographies. One such recent survey was "A bibliographical review of science policy studies in India". The main objective of this study was: (i) to compile a bibliography of science policy studies by Indian authors; (ii) to analyse these publications to find out the major trends and salient features of publications; and (iii) to examine the extent of professionalization in the field of science policy studies in India.

(f) Referral services

The IU has built up a comprehensive profile on the source of information on science of science. This covers information on important research Centres, societies, services brought out by various organisations; directories and guides. In addition of maintenance, a complete profile of research work is done in India. Based on this information, the Centre offers referral services to various researchers in India and abroad.

(g) Photocopying services

The IU has a reprography unit also. It supplies photocopies of important articles to the members

of the Centre and other researchers on demand on a nominal cost.

RECOGNITION OF IU ACTIVITIES

Recognizing the activities and services rendered by IU of CSSTD, the Department of Science & Technology has nominated it to act as a National Input Centre (NIC) for the forthcoming SPINES System, an international system in science policy. In 1976, a UNESCO seminar was held on "Management of R&D Institutions at Bangalore during Aug. 1-10, 1976 organized by UNESCO in collaboration with CSIR. A number of participants from developing countries and Asia in particular attended this seminar. This seminar made number of recommendations. One of the recommendations was that the present IU of CSSTD should be strengthened so that it can function as a major clearing house of information on science policy studies among the developing countries. In fact, Indian National Commission for UNESCO went a step further. By adopting a resolution (Aug. 21-22, 1976) emphasizing the need for the IU of CSSTD to be developed into the Central Processing Group for the SPINES system as a whole. This resolution was also presented to the UNESCO General Assembly meeting at Nairobi in 1976. The first ever workshop on SPINES was conducted by CSSTD in co-ordination with UNESCO for ten days at New Delhi in the third and fourth week of Oct., 1976. The workshop was attended by Members of IU and various information workers from PID, INSDOC, DST, DESIDOC, Electronics Commission, etc. Dr. de Padirac was the UNESCO expert on the Faculty. In addition to this, faculty was drawn from CSSTD, INSDOC, BARC, SENDOC, ICAR institutions, by their senior members. During the workshop, various elements of SPINES were introduced and discussed in detail followed by extensive practical exercises. One of the important outcome of the workshop was that the participants were given intensive training in the preparation of INPUT to the SPINES Programme.

Plea to understand students problems

Mr G.D. Tapase, Governor of Uttar Pradesh told the Vice-Chancellors of State Universities in their meeting recently held in Lucknow to make concerted efforts for creating an atmosphere in which the universities could function as true centers of learning.

Inaugurating the Conference of Vice-Chancellors of seventeen State Universities, the Chancellor told that the problem of students unrest should be tackled effectively and without losing time. He said it was not enough to find remedy for symptomatic eruptions here and there and deal with sporadic incidents that occur from time to time. He suggested that all aspects of the students' problem should carefully be examined from institutional, sociological, economic

nity also to consider how best they could contribute to the restoration of normalcy in these institutions.

Later addressing the Vice-Chancellors, the Chief Minister, Mr Ram Naresh Yadav said that students needed proper guidance from their teachers. They were competent to mould the sentiments of the students.

He asked the Vice-Chancellors to ensure that problems of students were solved immediately. Students problems relating to residence, ration and facilities in libraries should be paid immediate attention.

He emphasised the need to restrict admissions in universities which should be according to

greater planning in technical education which was now lopsided. While the neighbouring Tamil Nadu had large number of unemployed ITI candidates, there was a dearth of civil engineers in Andhra Pradesh.

The draft Sixth Plan did not envisage any large scale expansion in technical education. The Vice-Chancellor therefore thought there was need for those concerned to formulate a clear objective for our technical education.

The seminar among other things discussed 4-year programme for engineering degree course, relevance of the present day engineering education, two way traffic in industry and institution, research and development and consultancy in engineering institutions.

Earlier Mr J. A. Murray, Chairman of the Steering Committee of the seminar said that the country was switching over to 10+2+3 education system and a major discussion was going on whether we should retain the present five-year degree course or curtail it to a four-year degree course at the end of two year intermediate course.

However, Mr. Murray said that there was neither a perceptible change in the mode of education nor the gap between the world of work and the world of study was closer.

One of the objectives of the seminar was to devise ways and means to clear the dead-lock and break a new group in this direction.

Plea to restructure psychology teaching

The need to broadbase the teaching of psychology and revise the syllabi to meet the specific conditions and requirements of the country was stressed at the inaugural meeting of all-India Summer Institute in Psychology held recently in Madras.

The participants were of the view that the western ideas on psychology could not be applied in toto to Indian conditions. They felt that there was an urgent need to improve the methods and content of training psychology gradu-

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and other standpoints for finding a solution, and not merely as a law and order problem. The problem of bringing about normalcy in the academic session and conducting examinations on time is very important and needs serious consideration.

Mr Tapase said that students' unions were meant to provide the students with a forum for discussing their genuine difficulties. But unfortunately, the activities of the unions were not confined to the academic sphere.

The Governor, however, said that to put the blame squarely on the shoulders of students alone for the chaotic conditions prevailing in the universities and colleges would not be proper. In his opinion it was for the vice-chancellors and teacher commu-

merit. He added that residential universities should encourage correspondence courses and allow private candidates.

Need to plan technical education

The Vice-Chancellor of Sri Venkateswara University, Dr K. S. Murty stressed the need to develop technical education in consonance with the national objectives at the concluding session of the two-day national seminar on new dimensions in technical education recently held in Hyderabad.

The seminar was organised by the Institution of Engineers, Regional Engineering College, Warangal, and the Alumni Association.

Prof. Murty felt the need for

ates so that they could play a more useful role in solving the problems of the society.

Presiding over the Summer Institute Mr. C. G. Rangabashyam, State Education Secretary said that not only in psychology but in other subjects also, the academic studies were far removed from actual requirements and that situation had got to be changed and studies made suitable to the various vocations.

In the field of psychology, he was happy that the country had been able to keep pace with the development taking place in the world in recent years. But, he said, very little use of this science was being made in schools where the need was great, especially for providing vocational guidance and counselling. The demand for applied psychologists was great both in the Government and in private sector wherever management was involved but the supply was very meagre and even that was not well-equipped.

Dr T. E. Shunmugham, Head of the Department of Psychology, Madras University, who inaugurated the Institute, said it was necessary to restructure the teaching of the subject in terms of the needs of industrialists, educationists, doctors and others.

Mr Basheer Ahmed Sayeed, founder of the SIET Women's College, said applied psychology had now gained a great importance in every aspect of human life and in the industrial, clinical, academic and social fields. He added that the conclusions of the workshop would be made available to all those who recognised the dominant role that psychology had come to play in solving the various problems affecting the different sections of society.

Dr (Mrs) Savithri Krishnan, Director of the Summer Institute, said the main objective of the workshop was to discuss ways and means of bridging the gap between the present syllabi and the reality and make the training at the post-graduate level more vocation-oriented.

Fifty experts from the various universities and colleges in the country participated in the Institute.

South Gujarat study on non-formal education

The Department of Education of the South Gujarat University has initiated a project on 'Developing an effective model of non-formal education for rural development: A systems approach'—with a view to developing a system model for planning effective non-formal education programmes. The project will be conducted in rural setting. Besides studying the relationship between non-formal, formal and informal education in the rural context, attempt will be made to study the practical skills involved in non-formal education as well as study of teaching and learning approaches. A battery of evaluative tools for evaluation of non-formal education will also be developed.

The relevance of education to rural development having been realised, many projects in the field of education in search of a system which is need-centred and has interface with reality are coming up. Non-formal education is one of the alternative systems in education which has attracted attention on the part of educationists, administrators and researchers. On the basis of experiences it has been realised that there is an urgent need for developing systematic strategies (NFE model) which can help administrators and planners in planning and executing non-formal education programmes.

Another important study initiated by the Department is on "Radio-vision as a partial substitute to TV." The major aim of this project is to study the efficacy of Radio-vision as a medium of instruction in formal and non-formal education. NCERT and Indian Space Research Organisation have sanctioned financial assistance for these projects.

Dr G.B. Shah, Professor and Head of the Department of Education in the University is the Director of both these projects.

Research on solar energy use at IIT

A cold storage unit based on solar energy, with immense potentialities for widespread use in the rural areas is being developed by the mechanical engineering

department of the Indian Institute of Technology, Bombay.

Work on the unit, a sponsored project of the Department of Science and Technology of the Union Government, taken up last year, is expected to be completed by the end of 1978.

The solar powered cold storage unit, if it becomes commercially viable, will essentially be of a community type for use by group of farmers and will work out to be cheaper as compared to the conventional types of cold storage units.

The unit will be a self contained unit, unlike other cold storage units, which require power from the conventional sources like thermal and hydel stations.

The cold storage unit being developed at the IIT on an experimental basis is a small half tonne refrigerator that can preserve commodities stored in a room.

Professor Sukhatma of IIT, Bombay and head of the project pointed out that the same principle underlying the working of the solar powered cold storage unit could also be used to air-conditioned buildings.

He said, IIT, New Delhi, had also developed a similar cold storage unit, based on hot water springs instead of solar energy, for possible use in such areas in the country as had mineral springs. IIT, Madras was doing research in the use of solar energy and in the development of solar powered power stations. Solar stills could also be used in the rural areas, with practically no maintenance costs, for distilling water.

Adult education programme

The Union Cabinet has approved a massive programme of educating 100 million adults at a cost of nearly Rs. 600 crores. The programme is to be launched on October 2, Mahatma Gandhi's birthday.

It is described as the biggest single exercise in the last 30 years in linking adult education with rural development.

A committee with Dr. V.K.R.V. Rao as chairman has been set up to formulate the plan of action for the successful launching of the

National Adult Education Programme.

The Cabinet also approved the guidelines for recognition of voluntary agencies participating in the programme. The immediate objective of the programme is to cover 65 million people in the age group of 15-35 in the next five years. It is intended to provide functional education, correlated to the living and working conditions of the people.

The financial implications for the Centre during the first phase would be to the tune of Rs. 200 crore. This is provided for the development sector of education in the draft Sixth Plan.

The programme is to be implemented largely through State Governments which are expected to provide nearly half the expenditure in addition to that already allocated in the Plan document. As functional education is the aim, the scheme will cover social welfare projects for women and children, workers welfare and education, and also agricultural extension.

International diploma course in Hydrology

The University of Roorkee will organise International Post-graduate course in Hydrology sponsored by the United Nations Educational, Scientific & Cultural Organisation and by the Union Ministry of Education. The course is specially designed for students of hydrology particularly from the developing countries of Asia and Africa.

Trainees from Afghanistan, Bangladesh, United Arab Republic, Iran, Nepal Philippines, Burma, Nigeria, Sri Lanka are expected to participate in the course along with trainees from India.

Roorkee University was chosen to organize the course in view of its long standing reputation and tradition in irrigation and water resources engineering education and its location in the midst of several research institutions.

The course has been designed to offer advanced education and training in the principle of scientific hydrology and to equip the trainees with sufficient competence in the collection, analysis and use of hydrological data for integrated

and rational planning for water resources development.

A Postgraduate Diploma in Hydrology is awarded by the University to those trainees who successfully pass the final examination. While the Post-Graduate course is complete in itself, the University also has a provision to extend the course to Master's level for trainees who have completed the Diploma requirements and who are interested and able to continue their training to complete the additional requirements for a M.E. degree.

The course in Hydrology will start from the current academic session for a duration of twelve months. Candidates continuing for the Master's course will pursue a further programme of study and training of 9½ months duration.

Course on Aquatic Ecology

A two weeks Course on Aquatic Ecology was held at the Jawaharlal Nehru University under the Directorship of Dr. C.K. Varshney, Associate Professor at the School of Environmental Sciences, Jawaharlal Nehru University. The Central Board for the Prevention and Control of Water Pollution, New Delhi, provided the necessary financial assistance for organising this course. The objective of the course was to provide the necessary understanding of basic ecological concepts which play an important role in the planning and development of water resources for fisheries, city water supplies and control of pollution in rivers, lakes and reservoirs. The course was attended by 12 senior engineers representing the State Boards and private and public sector industries.

The course was formally inaugurated by Prof. B.D. Nag Chaudhuri, Vice-Chancellor of the Jawaharlal Nehru University. The course consisted of 24 lectures covering fundamental aspects of aquatic ecology, energy flow through aquatic ecosystems, pollution problems caused by heavy metals, waste heat and pesticides, radioactive subsistences and problems of eutrophication and their impact on the utilisation of water

resources for fisheries, health etc. Problems of water quality and health water recycling and monitoring and planning for development of water resources were also discussed during the course. A special feature of the course was a set of organised field and laboratory exercises which were carried out by the participants during this course. The lectures and the practical programme provided a very important input to the participants which will be of direct use to them in their normal duties in their respective organisations. The lecturers and instructors for the course were drawn from the School of Life Sciences, Jawaharlal Nehru University, BARC, Central Board for Prevention and Control of Water Pollution and Ministry of Agriculture.

The concluding session was addressed by Prof. Nilay Chaudhuri, Chairman of the Central Board for the Prevention and Control of Water Pollution. In his address he raised a very lively discussion on the problem of water standards which needed to be developed with great care and understanding as the conditions vary enormously from one location to another.

VCs discuss sports promotion

The Vice-Chancellors of seventeen Uttar Pradesh University in their recent meeting held in Lucknow discussed at length various measures to develop sports and games in the Universities.

The Secretary, Sports Department, Mr. I.M. Sahai, impressed on the Vice-Chancellors, the necessity to create the proper infrastructural facilities like employment of coaches, proper maintenance of playgrounds, purchase of adequate equipment without which it would be difficult to sustain interest among the students in sports activities.

It was suggested that in each university, there should be a full time Officer to co-ordinate the activities in this field, and sufficient funds should be provided for development of sports and for organising tournaments.

The Sports Secretary offered the services of coaches and other field staff belonging to the Sports

Department for training the boys and girls of the universities.

The Vice-Chancellors also discussed the steps to promote interest in mountaineering among students and teachers.

Sanskrit Varsity in South urged

The symposium recently held in Bangalore on the status of Sanskrit in different States organised by the Akhila Karnataka Sanskrita Parishad demanded the establishment of a Sanskrit University in South.

The symposium wanted a separate library for Sanskrit and appealed to the AIR and Doordarshan to allot more time for Sanskrit programmes.

Dr. V.K.R.V. Rao who inaugurated the symposium wanted Sanskrit to be made a compulsory language in the education system.

Prof. K.T. Pandurangi, Head of the Sanskrit Department, Bangalore University read out the resolutions adopted by the symposium. The symposium was attended by the representatives from Tamil Nadu, Madhya Pradesh, Uttar Pradesh, Kerala, Maharashtra, W.Bengal, Haryana, Gujarat and Jammu & Kashmir.

Madras University courses in Communications Science

Madras University proposes to offer from the next academic year Bachelor and Master's Degree courses in Communications Science in place of the present journalism courses.

The university with a view to making the department a model one, appointed a commission of eminent persons connected with journalism and mass communications, with Mr B.G. Verghese as chairman. The other members of the commission were Mr M.V. Desai, Director, Indian Institute of Mass Communication, and Secretary of the Press Council, Mr Krishan Sondhi, Member, Communication Council of the Planning Commission, Mr K.E. Eapen, Professor, Faculty of Communications, Bangalore University and Mr V.P.V. Rajan.

The recommendations of the commission are likely to determine

the pattern of journalism courses of various universities.

The commission is of the view that the curriculum should cover the entire gamut of mass communication—press, air, TV and advertising agencies—that would turn out personnel to meet the country's media requirements.

The commission has stressed that the courses be craft oriented and therefore the department should have all the infrastructure such as teleprinter service, printing press, recording studio cassettes and other electronic equipment of mass communication, dark room facilities for photography, projectors and well-equipped libraries.

The commission has suggested that the university's journalism course should be broad-based into a course of communication science. It is understood to have recommended starting of a weekly journal by the faculty of communications to provide practical experience to students.

The commission has also suggested the retiring persons who had distinguished themselves in various fields of mass media should be associated with the restructuring of the department.

Teaching in Cardiology

The Alkali and Chemical Corporation of India has evolved a teaching programme for the post-graduate medical students with a view to providing them a sound basis, practical and theoretical, for the correct interpretation of auscultatory (heart sounds) findings.

Entitled the "Audiovisual Library of Cardiology", the teaching unit comprises a booklet, a film, a sound cassette and a set of slides. Although the central theme of the programme is cardiac auscultation, the booklet aims at giving an overall view of the subject—etiology, pathology, ECG, X-ray and echocardiographic features. The film-depicts the genesis of the heart sounds and murmurs, characteristic of the lesions. The audio cassette gives examples of auscultatory findings, a number of listening exercises and also answers to them. The slides are annotated

and intended for use by lecturers as teaching aid.

The complete set comprises 18 units, the first providing basic information essential for an understanding of the subject. Each of the other units is concerned with a cardiac lesion or group of lesions. Although the items making up a unit are complementary, each element may be used independently, depending on the requirements of the student. These will be made available by the ICI Egmore (Madras) free of cost on loan to all teaching institutions.

Implementation of adult education programme

The Vice-Chancellor of Kashmir University Dr. Rais Ahmed told the participants of the national seminar held in New Delhi on training strategy for instructors, professors and project officers under the national adult education programme that their aim should be at developing the personality of the learner in full.

He said that the agencies involved in the implementation of the programme should not adopt the programme by way of extending cooperation alone but with the spirit that functional literacy was essential for the success of their own efforts. He said emphasis should be on the quality of the programme.

He also stressed the need for monitoring feedback information so that timely creative measures could be taken whenever necessary.

The objective of the national adult education programme was to develop the personality of the learner in full in the process of which socio-economic consideration could not be lost sight of.

Organised by the Directorate of Adult Education of the Education Ministry, the two-day seminar was attended by key-level personnel responsible for implementing the programme in the States and Union Territories.

Earlier in his opening remarks, Director of Adult Education A. K. Jalaluddin said that one of the objectives of the seminar was to determine the linkage of the centrally-sponsored programmes of adult education under the

auspices of the University Grants Commission, Nehru Yuvak Kendra and some other organisations under the National Service Scheme with the efforts at various levels by the State Governments and Union Territory administrations. He added that attempt was to avoid unnecessary overlapping of the efforts.

Referring to the syllabus and contents of the functional literacy programme, Mr. Jalaluddin said it should be aimed at creating awareness among the learners about their economic and social betterment through literacy.

Council for women education reconstituted

The Union Minister for Education and Social Welfare will be the Chairman and the Joint Secretary incharge of the Bureau of Education will be the Member-Secretary of the reconstituted Council for Women Education. All State Education Ministers will be members of the Council whose term is three years.

The three members of Parliament on the Council are Kumari Maniben Vallabhbbhai Patel and Mrs Bibha Ghose Goswamy from the Lok Sabha and Mrs Vijaya Raje Scindia from the Rajya Sabha.

The prominent non-official members include Dr Veena Mazumdar, ICSSR, Dr (Miss) Malathi Bolar, Director, Institute of Applied Manpower Research, Mrs Krishna Agarwal, Chairman, Bhartiya Gramin Mahila Sangh and Dr Anima Bose.

The Council will, besides reviewing the progress in the field, advise the Centre on all matters relating to education of girls and women and suggest policies, programmes, targets and priorities for the expansion and improvement of their education. It will also suggest measures for utilising the voluntary efforts and creating public opinion in favour of education of girls and women.

New pattern for degree course at Calcutta

A sub-committee of the Academic Council of the Calcutta University has formulated a distinctly different pattern of degree

course giving a wider choice of subjects, and no compulsory language. The new degree course in science and arts subjects offers a much wider choice of subjects to a candidate with minimum compulsory subjects. The rigid barriers between arts and science will be softened to promote interest in inter-disciplinary and employment oriented courses. Subjects proposed to be taught have been grouped in three divisions—humanities and social sciences, natural sciences and professional studies.

Under the new scheme no language is compulsory at the degree level. A candidate may however take English, Bengali, Hindi, Urdu or Nepali as an additional optional subject.

A candidate with or without honours will appear at an examination after completion of two years studies.

S.S. Bhatnagar award for twelve scientists

Shanti Swarup Bhatnagar prize for 1976 has been awarded to twelve scientists as per the announcement of the Council of Scientific and Industrial Research.

The prize has been given to one hundred scientists so far since its inception in 1958.

The 1976 winners are Prof. C.K. Majumdar of Calcutta University and Prof. R. Vijayaraghavan of Tata Institute of Fundamental Research (for physical sciences), Prof. D. Devprabhakara of the Indian Institute of Technology in Kanpur (for chemical sciences), Dr. Kishan Singh of the Indian Institute of Sugarcane Research and Dr. G.P. Datta of Central Drug Research Institute (for biological sciences), Dr. Rajinder Kumar of the Indian Institute of Science and Dr. V. Rajaraman of IIT, Kanpur (for engineering), Dr. N.R. Maudgal of Indian Institute of Science (for medical science), Prof. K.R. Parthasarthy of Indian Statistical Institute and Prof. S.K. Trehan of Panjab University (for mathematical sciences) and Dr. M.K. Bose of Presidency College, Calcutta and Dr. K.S. Valdiya of Kumaun University (for earth sciences).

Tamil journal on science and technology

Madurai University has approved a proposal of the Vice-Chancellor, Dr. V.C. Kulandaishwamy for publication of a science and technology journal in Tamil. It will be a quarterly journal to start with and will be on sale in October this year.

The journal will have two objectives, namely, to provide a forum for the publication of articles in Tamil on topics of interest in modern areas of knowledge and to help the development of technical terms, the style and tradition needed for the growth of scientific literature in Tamil.

The syndicate of the university has also sanctioned a "text book promotion scheme" under which the university will pay Rs. 1,500/- to authors for typing and preparation of a book and the authors will be free to publish it either by themselves or through regular publishers and get their royalty. The publication committee of the University will review the offer from authors and make the selections.

Bihar farmers learn cultivation techniques at PAU

A group of seventy-five farmers from Bihar participated in a seven-day course in rice cultivation at Punjab Agricultural University.

Dr. A.S. Atwal, Dean of the University College of Agriculture exhorted the Bihar farmers to learn better techniques of growing rice from Punjab and wheat from West Bengal as both the States produced the highest per acre yield in the country. He hoped that the change of experience between the farmers of the various States would greatly benefit each other. During the programme the rice experts of the University delivered lectures on the scientific cultivation of rice right from the sowing of nursery to the harvesting of the crop. The farmers stayed in groups with the farmers in Punjab villages to acquaint themselves with the various operations of cultivation.

President inaugurates Golden Jubilee celebrations of Andhra University

President N. Sanjiva Reddy while inaugurating the Golden Jubilee Celebrations of the Andhra University in Visakhapatnam stressed the need for a drastic change in the content and purpose of education. He regretted that even after 30 years of independence no proper system had been evolved in the matter of basic education. He said many experiments had been attempted in the pattern of education beginning with basic education advocated by Mahatma Gandhi and vocational education championed by Rajaji. But we have not been able to evolve a pattern of education suited to the economic life of the community resulting in growing unemployment and frustration among the educated. He suggested that the Soviet concept of vocationalisation should be looked into while making an indepth study on education. The students should be given vocational training and automatically absorbed in gainful employment.

He told that the time has come when we have to ponder how far we are correct in creating hundreds of thousands graduates and post-graduates every year.

The President said instead of giving higher education we have to think whether we have to follow the system to branch off students after basic education. The President added that the students should not be allowed to get frustrated after higher education and the Government should think on these lines and take responsibility to utilise the talent of the youth.

The President called upon students to eschew violence and give time to the Government to take up constructive work in peaceful atmosphere. The President said without peace the Government could not implement welfare measures of the down-trodden. Any problem could be solved by discussion, he said and urged students to give a helping hand to the Government in implementing the schemes.

He called on the academicians to examine these questions unbiased and throw some light in solving the problems. He asked the universities to give a lead for free and objective discussions on such problems.

Earlier Mrs Sharda Mukherjee, Chancellor of Andhra University said that the nation was today spending huge sums of money so that the younger generation could have the best possible education. It was their responsibility to make the best use of the opportunity. She reminded the student community that the country was on the threshold of the scientific and technological era. The future belonged only to the efficient and the hardworking. She appealed to the students to make the best use of what was available to them and equip themselves to face the future and take the country ahead.

The Andhra Pradesh Chief Minister, Dr. M. Channa Reddi announced the sanction of two hostels—one for 300 boys and the other for 300 girls to the Andhra University during the current year. He noted that the recent conference of Vice-Chancellors of the State had discussed and taken decisions on many issues of vital concern to the academic community such as orientation of curricula to social needs and greater rapport among the different components of higher education—the students, teachers and non-teaching staff. He hoped that these exercises would help reduce the gap between the campus and the community.

Stress on work based education

The Union Education Minister, Dr P. C. Chunder in his convocation address on the occasion of the Golden Jubilee celebrations of Andhra University called for introduction of work-based education which would encourage earning while learning.

Dr. Chunder said there should be a link between education and work. The introduction of pro-

ductive work into the educational process as a means of enhancing the value of training and providing a proper preparation for working life are of great significance to us.

The Education Minister said the Government was proposing accelerated universalisation of elementary education through formal and non formal education programmes so that all the children in the age group of 6 to 14 years received education.

He said that the formal structure of education with its rigidity and excessive centralisation could not help promote democratisation of education. The non-formal education should be designed to suit the needs of various categories of learners and integrated with the formal system.

He suggested that the formal system itself should be modified to provide for multiple entry, discontinuance of detentions, internal evaluation and upgraded classes and opening of public examinations for private appearances. Part-time, own-time courses of study, correspondence education and distant teaching should all be brought into the scheme to expand accessibility. He told that the objective must be the development of open learning system which is accessible to all people at all stages of education.

Dr Chunder called for improvement of quality of education at all levels. Education should be relevant to the needs of the learners and the environment in which it is imparted. There should be identification and encouragement of talents among the weaker sections.

He said that the improvement in quality and relevance of education should aim at developing a community which had the requisite skill and knowledge to plan programmes for the improvement of its economic, social and cultural conditions.

Calling for encouragement of teaching of science for development of rational outlook and scientific methods of inquiry to dispel obscurantism and prejudices, the Union Minister said that teaching of culture and history should help promote social and national integration.

PM calls for radical changes in education

The Prime Minister, Mr Morarji Desai while inaugurating the conference of State Education Ministers in Delhi called for radical changes in the educational system in the country. He stressed the need to work out the changes and implement them with full determination.

The Prime Minister welcomed the consensus on the urgent need to bring about a complete change in the educational pattern. He said those concerned with the new programme should be convinced and their cooperation sought through persuasion.

Mr Desai added that the purpose of education should be in creating the student the capacity to understand what he learnt. It should enable him to discriminate between right and wrong and assess what was beneficial to the society.

He emphasised that the students should be encouraged to undertake physical labour and develop interest in it. This will enable them to cover a major portion of the expenses incurred on education. He said all human beings have equal potential but the circumstances around them made all the difference.

The Prime Minister suggested that social work should also form a part of the curriculum. He felt there were too many holidays for teachers and students. He called for emphasis on proper training of teachers which he thought would benefit students and society as well.

The Prime Minister wanted that the education should be imparted through regional languages from primary to doctorate level as far as possible.

Mr Desai underlined the need to incorporate moral values in the educational system. He said although a large number of prizes were awarded to the students every year, there was hardly any prize for truth and selfless service. The Prime Minister suggested that the

educational institutions should be free from Government interference. He added that the Government should only ensure that the financial assistance given to these institutions is not misused.

The Union Education Minister, Dr P.C. Chunder in his opening remarks told the conference that the working group had prepared a detailed plan of action for implementation of universalisation of elementary education. The plan envisaged 90 per cent enrolment in the age group of 6 to 14, in the next five years.

Dr Chunder said the education must be restructured in accordance with our traditions, values and culture to make it relevant to our needs.

Indian contingent for commonwealth games

A sixty-member Indian contingent will participate in the forthcoming commonwealth games to be held in Edmonton (Canada) from August 3 to 12.

The names have been approved by the Government on the basis of the criteria laid down by the All-India Council of Sports, and the recommendation of the Indian Olympic Association. The present contingent is double in size to that approved for the last commonwealth games held at Christchurch in New Zealand in 1974.

The Government will bear 85 per cent of the passage cost of 41 competitors, 10 coaches/managers and two officials including chef-de-mission. The balance 15 per cent will be borne by the games organisers.

The gymnastic event has been included for the first time in commonwealth games. The shooting and cycling teams have also been allowed for the first time to participate in these games.

Chair for islamic literature at Madurai

The Syndicate of Madurai University has sanctioned the

establishment of a chair in 'Islamic Tamil Literature in its Department of Tamil Studies.

This will be financed by an endowment created by the Tamil Nadu Government. The objective of the chair in Islamic Tamil literature will be to make an indepth study of the vast contributions made by Muslim scholars in the last 400 years covering many aspects of life, value system, philosophy and the religious and social life of the Muslim community.

NCERT introduces postgraduate course in Life Sciences

The Regional College of Education run by the NCERT and affiliated to the Utkal University will conduct Master of Science Education (M.Sc. Ed.) degree course in Life Sciences from the current academic year. This innovative course is designed to prepare lecturers and postgraduate teachers in Life Sciences for various levels of education. Those who complete the course will be able to compete for posts which require a Master's Degree in the subject and relevant pedagogy or opt for research. The candidates seeking admission should possess B. Sc. and B.Ed. degrees in Botany/Zoology/Life Sciences/Biological Sciences.

Gujarat cancels some results of 1st year BSc

The Gujarat University detected certain malpractices in the marking of answerbooks of the 1st year BSc examinations held by the University this year. Based on the report of a committee appointed for the purpose, the Syndicate of the University cancelled the results of 21 candidates who were in the merit list of the 1st year BSc examination for admission to the MBBS course in the university. It is further learnt that some of the aggrieved candidates have gone to a court filing a writ against the university. The Press and the public appear to have reacted to the move of the Gujarat University favourably considering that admissions to medical colleges would be fair.

Government favours autonomy for sports bodies

The Union Minister of State for Education, Social Welfare and Culture, Mr. D.S. Gulshan said in Madras that the Government was not at all interested in interfering with the autonomy of sports bodies, federations or associations.

They were all independent to play their role in the national development of sports, and if they had any dispute, it should be referred to the Indian Olympic Association or the All-India Council of Sports for arbitration in accordance with the guidelines issued by the Ministry of Education.

He was presiding over the closing function of the Volleyball Federation of India organised for coaching of Indian probables for the forthcoming Asian games in Bangkok.

UGC funds for solid state research at Osmania

The University Grants Commission has sanctioned a sum of Rs.8 lakhs to the Department of Physics, Osmania University under a major scheme on 'Some aspects of Solid State Physics' for the purchase of X-ray diffractometer. This is made in recognition of the significant contribution of the Department in the field of X-ray diffraction. No other University in Andhra Pradesh is actively engaged in X-ray diffraction work. It is hoped that with the addition of the diffractometer the Solid State research group will be strengthened.

Draft on national education policy

The Union Education Minister, Dr P. C. Chunder said in Gauhati recently that the draft on national policy on education suggesting radical changes in the entire educational system of the country to meet the needs of the changing circumstances has been formulated by his Ministry.

The Union Minister discouraged the unplanned growth of the colleges in the country and said that instead of opening new colleges the authorities should concentrate

in maintaining the existing colleges properly to impart job-oriented education to tide over the difficult unemployment problem in the country.

However, he said the Univer-

sity Grants Commission has given permission to set-up some new colleges in rural and backward areas in the country for expansion of education in those remote areas.

PANJAB UNIVERSITY CHANDIGARH

Advertisement No. 16/78

Applications are invited for the following posts so as to reach the Registrar, Panjab University, Chandigarh, along with postal orders for Rs. 10/- by 10.8.1978. Fourteen days extra time is permissible to the persons who have to submit their applications from abroad.

Posts, Pay-scales and Qualifications

1. Director-cum-Professor-1 (Rs. 1500-60 - 1800 - 100 - 2000 - 125/2 - 2500) (Department of Physical Education)

QUALIFICATIONS

Essential

1. A first or high second class Master's Degree of an Indian University or an equivalent qualifications of a foreign University in the subject with bright academic record.
2. Either a research degree of doctoral standard or published research work of high standard in journals of repute.
3. About 10 years' experience of teaching Post-Graduate classes and/or research; and
4. Experience of guiding research at Doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge in the discipline concerned.

Desirable

- (i) Adequate experience of organising University and Inter-University Tournaments and of conducting coaching camps in different games and sports.
- (ii) Proficiency in Athletics or in a major game of the level of Inter-University participation.

2. Professor-1 (Rs. 1500-60-1800-100-2000-125/2-2500) (Department of Indian Theatre)

QUALIFICATIONS

Essential

1. Master's Degree, at least 2nd class, preferably in theatre arts, literature or an allied subject.

OR

Diploma from the National School of Drama.

2. Thorough knowledge of the theory of drama, especially Indian Drama and practical acquaintance with modern stage-craft and Dramaturgy with experience of staging plays.

3. Ten years' practical/teaching experience in the production of plays in various styles and in the field of theatre.

Desirable

- (i) Special achievements in Indian drama at national level.
- (ii) Ph.D. or equivalent research work in theatre arts, literature or language.

Preference will be given to candidates who in addition, have had the experience of the handling of a theatre institution and have attained eminence in the field of theatre.

Persons already in service should route their applications through proper channel. Incomplete forms and those received after the due date will not be entertained. Serving employees, may however, send their applications on the prescribed proforma direct to the University. They may route another copy through their Departments. They will be allowed to present themselves for interview only on the production of a 'No Objection Certificate' from their employers. Canvassing in any form will disqualify the candidate.

Application forms can be obtained from the Cashier, Panjab University, Chandigarh, personally on payment of Re. 1/- or by making a written request to the Finance and Development Officer, Panjab University, Chandigarh, accompanied by self addressed stamped envelope of 23x10 cms. and a postal order for Re. 1/- drawn in favour of the Registrar, Panjab University, Chandigarh.

OSMANIA UNIVERSITY

Hyderabad-500 007

No. 376/17/1978/Admn.(G)II-1
July 3, 1978

Notification

It is hereby notified to all concerned that the Registration Fee for appointment in the Osmania University should be paid on challan 'A' instead of challan 'C' Form, with effect from 1st July 1978.

B. Ramachandra Reddy
REGISTRAR

Conferences, Seminars and Workshops

July—September, 1978

Date	Title	Venue	Sponsoring Body
20 June—13 July	All India workshop in physiology and biochemistry	Indore	University of Indore
26 June—14 July	Summer School in nuclear structure and nuclear reaction mechanisms	Bangalore	Indian Inst. of Science
26 June—19 August	Training programme in machine tool design	Bangalore	Central Machine Tool Institute
June—July	Analysis and design of HV systems	Madras	IIT, Energy Res Centre
6 July—7 July	Growth of medical electronics symposium	Madras	Inst of Telecommunication Engineers
8 July—7 August	Summer Institute in Commerce for college teachers	Mysore	University of Mysore
10 July—12 July	Intensive course for industrial participants on heat exchanger design	Kanpur	I.I.T.
10 July—13 July	Refresher seminar on application of computers to biographical information processing some developments in India	Bangalore	Dept of Sc & Technology & Documentation Res & Trng. Centre and CSIR
10 July—15 July	Material planning	New Delhi	Indian Inst of Public Admn.
10 July—22 July	Computer programming and computer oriented numerical methods	Dhanbad	Indian School of Mines
16 July—onwards	23rd Post-graduate course on water resources development	Roorkee	Water Resources Dev. Training Centre, Univ of Roorkee
17 July—28 July	Investment planning and project evaluation	Hyderabad	Admin. Staff College
17 July—31 July	Design of concrete shell structures	Bangalore	Indian Inst of Science
19 July—29 July	Tribal Development Administration	New Delhi	Indian Inst of Public Admn.
21 July—12 August	Summer Institute in Biology (Botany)	Srinagar	Univ of Kashmir
24 July—29 July	Training course in teaching of maternal and child health at undergraduate and internship levels	New Delhi	W.H.O.
24 July—5 August	Geotechnical engineering	Dhanbad	Indian School of Mines
26 July—27 July	All India Seminar on growth prospects of electronic industries in the 80's	Hyderabad	Instn. of Engineers (India)
31 July—11 August	Performance budgeting	New Delhi	Indian Inst of Public Admn.
July—Last week	Inter-regional seminar on epidemicological surveillance	New Delhi	W.H.O.
July	Seminar on aerial photography appreciation	New Delhi	Survey (Air) of India
July	Short term workshop on Algal viruses and nitrogen fixation	Madurai	Madurai University
2 Aug—16 Aug	Experimental stress analysis and fracture mechanics	Bangalore	Indian Inst of Science
7 Aug—12 Aug	Management by objectives	Hyderabad	Admin Staff College
7 Aug—12 Aug	Productivity approach to industrial relations	Madras	Indian Inst of Management, Bangalore
7 Aug—26 Aug	Computer systems analysis and design	New Delhi	Indian Inst of Public Admn.
11 Aug—13 Aug	Seminar on hydraulics and water resources engg practices in India	Madras	College of Engg., Guindy
14 Aug—19 Aug	Management of education systems	Hyderabad	Admin Staff College
17 Aug—19 Sept	Autumn Inst on computer based numerical algorithms	Bangalore	Indian Inst of Science
21 Aug—2 Sept	Policy formulation and implementation	New Delhi	Indian Inst of Public Admn.
21 Aug—14 Oct	Second training course in handling and application of radioisotopes	Hyderabad	Hyderabad Science Society
28 Aug—2 Sept	Management information systems	Hyderabad	Admin Staff College
28 Aug—2 Sept	Population communication: planning and implementation	Bangalore	Indian Inst of Management
28 Aug—8 Sept	Introduction to management accounting	New Delhi	Indian Inst of Public Admn.
29 Aug—1 Sept	Land use models and environmental infrastructure systems	Mysore	Indian Inst of Management, Bangalore

Date	Title	Venue	Sponsoring Body
30 Aug—12 Sept August	Social policy and administration Seminar on polymer engineering and technology	New Delhi Baroda or Pune	Indian Inst of Public Admn. Instn of Engineers (India)
August	Seminar on psychology: therapeutic processes	Bangalore	National Inst of Mental Health and Neuro Sciences
August	Seminar on technological development in village industries and its impact	Gandhigram T. Nadu	Gandhigram rural Institute
August	Seminar on Vyapti in Indian logic	Tirupati	SVU College
August/October	Advanced training course on neurophysiology under Indo-FRG Programme	Madurai	Madurai University
4 Sept— 6 Sept	5th National systems conference	Ludhiana	Dept of Elec Engg., Punjab Agri- cultural University
4 Sept— 9 Sept	International conference on Raman Spectroscopy	Bangalore	Raman Res Institute
4 Sept— 9 Sept	Management science applications in Health & Family Welfare	Bangalore	Indian Inst of Management
4 Sept— 9 Sept	Management information systems for mining industry	Dhanbad	Indian School of Mines
10 Sept—12 Sept	International congress on Prevention of heart disease and cardiac rehabilitation	Bombay	
11 Sept— 16 Sept	Linear programming applications	Bangalore	Indian Inst of Management
11 Sept—20 Sept	Occupational and Mental health in Industry	Bangalore	Indian Inst of Management
11 Sept—23 Sept	Introduction to operations research	New Delhi	Indian Inst of Public Admn.
12 Sept—17 Sept	Workshop on development and strengthening of mental retardation programme	New Delhi	W.H.O.
18 Sept—29 Sept	Maintenance Management	Bangalore	Indian Inst of Management
18 Sept—30 Sept	Management information systems	New Delhi	Indian Inst of Public Admn.
20 Sept— 7 Oct	Budgeting and financial control	New Delhi	Indian Inst of Public Admn.
21 Sept—23 Sept	Seminar on educational policy (for Vice- Chancellors)	Hyderabad	Admin Staff College
21 Sept—23 Sept	Workshop on ancient Indian sculptural studies: a search for alternative frameworks	Gwalior	Jiwaji University
21 Sept—14 Oct	Advanced study institute on ferrous foundry technology	Bangalore	Indian Inst of Science
23 Sept—27 Sept	5th Asian and Australasian Congress of Anaes- thesiology	New Delhi	
25 Sept—30 Sept	Administrative Law	New Delhi	Indian Inst of Public Admn.
25 Sept—30 Sept	Management of public systems	Bangalore	Indian Inst of Management
25 Sept—30 Sept	Seminar on economic justification of NC Machines	Bangalore	Central Machine Tool Institute
25 Sept— 1 Oct	New development in political science: a refresher course for lecturers	Amritsar	G.N.D. University
27 Sept—30 Sept	Seminar on safety in aviation	New Delhi	Instn of Engineers (India)
28 Sept— 2 Oct	9th International congress of the International Society for Heart Research	New Delhi	School of Environmental Sciences, J.N.U.
September	Education and social change in Himachal Pradesh	Simla	School of Edn., HP University
September	National design engineering conference	Madras	I.I.T.
Sept—Oct	All India workshop on planning research projects and designing research tools in education	Sagar	Univ of Saugar, Faculty of Educa- tion.

Subject Index

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Art			
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Business Management			
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28 Aug – 8 Sept	Introduction to management accounting	New Delhi	Indian Inst of Public Admn.

Date	Title	Venue	Sponsoring Body
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17 July—28 July	Investment planning and project evaluation	Hyderabad	Admin. Staff College
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7 Aug—12 Aug	Management by Objectives	Hyderabad	Admin Staff College
28 Aug—2 Sept	Management Information Systems	Hyderabad	Admin Staff College
18 Sept—30 Sept	Management Information Systems	New Delhi	Indian Inst of Public Admn.
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21 Sept—23 Sept	Seminar on educational policy (for Vice-Chancellors)	Hyderabad	Admin Staff College
Electricity and Electronics			
26 July—27 July	All India seminar on growth prospects of electronic industries in the 80's	Hyderabad	Instn of Engineers (India)
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Geology and Surveying			
24 July—5 Aug	Geotechnical engineering	Dhanbad	Indian School of Mines
July	Seminar on aerial photography appreciation	New Delhi	Survey (Air) of India
Life Sciences			
20 June—13 July	All India workshop in physiology and biochemistry	Indore	University of Indore
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21 July—12 Aug	Summer institute in Biology (Botany)	Srinagar	University of Kashmir

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Medicine			
Aug—Oct	Advanced training course on neurophysiology under Indo-FRG Programme	Madurai	Madurai University
23 Sept—27 Sept	5th Asian and Australasian congress of Anaesthesiology	New Delhi	
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21 Aug—14 Oct	Second training course in handling and application of radioisotopes	Hyderabad	Hyderabad Science Society
Mining and Minerals			
4 Sept— 9 Sept	Management information systems for mining industry	Dhanbad	Indian school of Mines
Philosophy			
August	Seminar on Vyapti in Indian logic	Tirupati	SVU College
Physics			
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26 June—14 July	Summer School in nuclear structure and nuclear reaction mechanisms	Bangalore	Indian Institute of Science
Political Science			
25 Sept— 1 Oct	New development in political science: a refresher course for Lecturers	Amritsar	GND University
Psychology			
August	Seminar on psychology: therapeutic processes	Bangalore	National Inst of Mental Health and Neuro Sciences
Public Administration			
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25 Sept—30 Sept	Management of Public systems	Bangalore	Indian Institute of Management
21 Aug— 2 Sept	Policy formulation and implementation	New Delhi	Indian Inst of Public Admn.
30 Aug—12 Sept	Social policy and administration	New Delhi	Indian Inst of Public Admn.
Public Health and Safety			
July (Last week)	Inter-regional seminar on epidemicological surveillance	New Delhi	W.H.O.
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27 Sept—30 Sept	Seminar on safety in aviation	New Delhi	Instn. of Engineers (India)
24 July—29 July	Training course in teaching of maternal and child health at undergraduate and internship levels	New Delhi	W.H.O.
12 Sept— 17 Sept	Workshop on development and strengthening of mental retraining programme	New Delhi	W.H.O.
Rural Development and Population Control			
29 Aug— 1 Sept	Land use models and environmental infrastructure systems	Mysore	Indian Inst of Management, Bangalore
28 Aug— 2 Sept	Population communication: planning and implementation	Bangalore	Indian Institute of Management
August	Seminar on technological development in village industries and its impact	Gandhigram T. Nadu	Gandhigram Rural Institute
19 July—29 July	Tribal development Administration	New Delhi	Indian Inst of Public Admn.
Water Resources			
11 Aug—13 Aug	Seminar on hydraulics and water resources engineering practices in India	Madras	College of Engineering, Guindy
16 July-onwards	23rd Post-graduate course on water resources development	Roorkee	Water Resources Dev. Training Centre, University of Roorkee

A list of Doctoral Theses Accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Arora, Shri Ram. On some aspects of zero-one programming. University of Delhi.
2. Chichra, Pran Nath. On the the univalency and some related properties of certain classes of regular functions in the unit disc. Punjabi University.
3. Parthasarthy, K. Segal algebras: Some explorations. I.I.T., Kanpur.
4. Raina, Ravindra Krishna. Study of H-function. University of Udaipur.
5. Sethi, A. S. New analytic models for multiprocessors with various interconnection structures. I.I.T., Kanpur.
6. Sharma, Kamalakant. Some types of Riemannian and infinitely connected spaces. University of Calcutta.
7. Vinod Behari. Detection of outliers: An asymptotic approach. Punjabi University.

Statistics

1. Kannaiah Naidu, L. Some aspects of errors-in-variables linear model. Sri Venkateswara University.

Physics

1. Balial, Mukund Madhukar. X-ray study of the electronic structure of matter: A study of the absorption discontinuities of copper and cobalt in some spinels and ternary diamond-like semi-conductors. Nagpur University.
2. Chattopadhyay, Amitabha. Investigations on the crystal and molecular structure of organic substances by X-ray diffraction. University of Calcutta.
3. Chouhan, Malkiat Singh. Studies of total electron contents of the ionosphere at low latitudes. Punjabi University.
4. Ganapathy, S. Application of nuclear magnetic resonance in structural crystallography. University of Madras.
5. Iyakutti, K. Electron energy bands for Zr, Os and Th, and application to positron annihilation. University of Madras.
6. Pokharna, Surendra Singh. Study of the effect of the phonon and roton interactions on the transport properties of liquid helium. University of Udaipur.
7. Sharma, Nageshwar. Synthesis of active RC networks. University of Bihar.
8. Sharma, Ram Vir. Studies of ionospheric drift velocities and irregularities at different heights over a low latitude. University of Udaipur.
9. Sharma, Shyam Sunder. Application of angular correlation measurements in nuclear spectroscopy. University of Udaipur.
10. Sodhi, Ashok, Vijay. Study of Σ resonances and ΔP mass enhancement in K-deuteron interactions near 2 GeV mass region. University of Delhi.

Chemistry

1. Agarwal, Triloki Nath. Synthesis of some diketones and kinetic study of their oxidation with lead tetra acetate. Meerut University.
2. Ahmad, Md. Faiz. Thermochemical studies of uranium and some uranyl complexes. Bhagalpur University.
3. Astik, J. K. Studies on optical activity and reaction mechanism. Saurashtra University.
4. Banerjee, Nirupama. Studies on the effect of the products of Browning reaction on microorganisms. Kanpur University.
5. Chakraborty, Swapna. Study of metal porphyrin complexes in petroleum crudes. Meerut University.
6. Chander Shekhar. Analytical applications of some thioorganic complexing reagents. Punjabi University.
7. Das, Sunil Kumar. Synthetic inorganic ion exchangers based on some tetravalent pentavalent elements. Visva Bharati University.
8. Dwivedi, Ramesh Chander. A study on the complex-

ing properties and analytical application of 1 allyl 2-terazoline 5-thione (Hatt-5). Kanpur University.

9. Ganesh Prasad Singh. Study on ion solution in dimethyl sulfoxide-water mixed solvent at a series of temperatures. University of Bihar.
10. Gupta, Jagdish Chander. A study of non-conventional oilseeds viz. neem (*Azadirachta indica*) & nageshwar (*Mesua ferrea* Linn) oilseeds. Kanpur University.
11. Gupta, Rajni. Chemical changes occurring in the mammalian brain tissue during hypoglycemia. Meerut University.
12. Hussain, R.C. Amperometric titrations: 2-hydroxy-1-acetonaphthoneoxime as titrimetric reagent. Sri Venkateswara University.
13. Mahapatra, Prabhu Prasad. Some aspects of phosphate-arsenate and phosphate-vanadate exchange reactions in hydroxylapatite. Sambalpur University.
14. Maheshwari, Mahendra Kumar. Kinetics and mechanism of oxidation of alcohols by peroxydisulphate ions. Meerut University.
15. Mandal, Sudhansusekhar. Coordination chemistry of molybdenum. University of Calcutta.
16. Nagarajan, K. Structural effects in cooxidation and catalysis in oxidations with chromium (vi). University of Madras.
17. Naharia, Shiv Charan. Studies on some natural esters of glycerol with higher fatty acids. Meerut University.
18. Narasimhan, S. Oxidation of aromatic hydrocarbons by transition metal ions: A kinetic and mechanistic study. University of Madras.
19. Pachauri, Lokendra Singh. Effect of hydrogen bonding on the titration curves of some synthetic phenolic oligomers and related copolymers in non-aqueous media. University of Delhi.
20. Pant, Pushpa. Chemical investigation of medicinal plants. Kanpur University.
21. Pratap Singh. Study of some aromatic medicinal plants. Kumaun University.
22. Rangamannar, B. Study of complexes by isotopic exchange: Cobalt (II) and nickel (II) complexes. Sri Venkateswara University.
23. Sachdeva, Om Prakash. Kinetics of the oxidation of some organic compounds by lead tetra acetate. University of Udaipur.
24. Saighal, Balbir Singh. Studies in the benzothiazole analogues of sulphonamides. Kanpur University.
25. Sambho Narayan, Garimella Krishna Anjaneya Subramanya. New triterpenes from *Barringtonia acutangula* Gaertn. Andhra University.
26. Sreenivasulu, R. Polarography of some metal complexes. Sri Venkateswara University.
27. Sunder Ram, A. N. Studies on the metal complexes of some polydentate Schiff bases. University of Kerala.
28. Suresh Chander. Studies on the development of new analytical techniques for Indian rocks and minerals. Kanpur University.
29. Swami, Yashodhan. Stereochemical investigations of some transition metal complexes involving nitrogen as donor atom. Meerut University.
30. Upadhyaya, Santosh Kumar. Kinetics of the oxidation of some α -amino acids by ferricyanide. Kanpur University.
31. Vazirani, Shyam. Kinetics of the oxidation of some esters of α hydroxy carboxylic acids by ions of the transition metals. University of Udaipur.
32. Venkataboopathy, K. Studies on vegetable tanning agents: Reactions of myrobalan (*Terminalia chebula*) tannins and naphthalene sulphonic acid condensates on hide protein. University of Madras.
33. Venugopalan, K. A. Synthesis characterization and thermoanalytical investigations of metal complexes of some sulphur-donor ligands. University of Delhi.

34. Virender Bahadur. Studies on nuclear quadrupole resonance spectra and electronic properties of solids. Kanpur University.

Earth Sciences

1. Hazarika, Indra Mohan. Geological studies on sedimentary rocks and coal of the foot-hill region of Kameng District, Arunachal Himalaya. Gauhati University.

Engineering & Technology

1. Badhe, Arvind Vishnupant. Kinetics of the esterification of ethanol by one step process. Nagpur University.

2. Dhabadgaonkar, Sudhakar Manohar. Studies on some aspects of sludge blanket clarification in water treatment. Nagpur University.

3. Venkataramana, Jandhyala. Axial mixing in rotary disc contactors. University of Madras.

BIOLOGICAL SCIENCES

Anthropology

1. Bishnoi, Sarla. A spectrophotometric study of the variability of skin colour and its inheritance among the Punjabis. University of Delhi.

2. Eswariah, Giddaluri. Palmar creases and diseases. University of Saugar.

Biochemistry

1. Belsare, Shashikala Devidas. Biochemical and physiological significance of regulation of free fatty acids mobilization and their utilization. Nagpur University.

2. Gangopadhyay, Sabyasachi. Biochemical studies on endometrial tissue. University of Calcutta.

3. Jiddewar, Gangadhar Ganpatrao. Effect of different chemical agents on experimentally induced fatty liver. Nagpur University.

4. Kachole, Manvendra Sawalaram. Microsomal electron transport reactions during pesticide treatment. Marathwada University.

5. Kaushik, Raghupati. Biochemical and metabolic changes in chronic fluoride intoxication. Punjabi University.

6. Mathur, Puran Nath. Induced synthesis of phetolaxins in some crop plants. University of Udaipur.

7. Mehta, Shanti Lal. Isolation of inhibitors of proteolytic enzymes from certain pulses and to study their physicochemical properties. University of Udaipur.

8. Rathore, Amar Singh. Effect of dietary factors and hormones on oxalate metabolism in albino rats. University of Udaipur.

Marine Biology

1. Devaraj, M. The biology of the fishery for the seer fishes in India. Madurai University.

2. Sarma, Baladev. Palynological studies of aquatic plants lake mud and honey of Assam. Gauhati University.

Botany

1. Abraham, Suresh K. Genetic toxicological evaluation of commonly used Indian spices and Betel quid in *Drosophila melanogaster*. Jawaharlal Nehru University.

2. Dubish, Pramod Kumar. Studies on rhizosphere mycoflora of some vegetable crops. Meerut University.

3. Gupta, Dipak. Studies on certain aspects of biology of some woodrotting Basidiomycetes. University of Calcutta.

4. Jain, Prakash Chandra. Morphological and physiological studies of some keratinophilic fungi with special reference to soil dermatophytes. University of Saugar.

5. Jindal, Kokila. Ecophysiological observations on some solanaceous plants with special reference to germination, productivity and energetics. University of Udaipur.

6. Kalode, Manohar Balaji. Biology, cytology, life cycle studies and systematics of some rare genera of Uredinales from Central India. Nagpur University.

7. Khan, Attahar Ali. Morphological studies in the family Acanthaceae. Awadhesh Pratap Singh University.

8. Madhusudhana Rao, I. Carbon metabolism and water relations of six woody weed species and their modification by paraquat and 2,4, 5-T. Sri Venkateswara University.

9. Padmanabhan Potty, V. Rhizosphere microflora of coconut palms with special reference to root (wilt) diseases. University of Kerala.

10. Pandey, Arun Kumar. Development and structure of seeds and fruits in some Compositae. Kanpur University.

11. Purohit, Shyam Sunder. Ecophysiological observations on *Helianthus annuus* L. with special reference to germination, productivity and energetics. University of Udaipur.

12. Rajni Bala. Ontogenic and morphological studies in the family Verbenaceae. Meerut University.

13. Sindhan, Gajendra Singh. Studies on the angular leaf spot and anthracnose of French bean, *Phaseolus vulgaris* L. Kumaun University.

14. Thomas, Joseph. A comparative study of the properties of Dolichos enation mosaic virus, Southern sunn hemp mosaic virus and Tobacco mosaic virus. University of Madras.

15. Verma, Satish Chander. Studies on the morphology and physiology of the canal organism associated with the stackburn disease of paddy and its control in U.P. Kanpur University.

Zoology

1. Abraham, J.C.B. Studies on the biology of the toad, *Melanostictus Schneider*. Madurai University.

2. Basu, Krishna. Effects of benzene hexachloride on the blood of adult female cockroach, *Periplaneta americana* Linn. University of Calcutta.

3. Dharam Vir. Studies on the levels of DDT residue in soil and human blood in Delhi and its metabolism in certain animals. University of Delhi.

4. Hakim, Abdul. Morphometry of the respiratory organs of certain Indian fresh-water fishes. Bhagalpur University.

5. Mohan, S. Biochemical and physiological studies of senile muscular atrophy. Bangalore University.

6. Pandey, Laxman Prasad. Studies on the morphology and taxonomy of certain Indian digenetic trematodes with special reference to their intraspecific variations. Awadhesh Pratap Singh University.

7. Raut, Srimanta Kumar. Ecology and ethology of *Achatina* (*Lissecatina*) *fulica* Bowdich and *Macrochlamys indica* godown ansten. University of Calcutta.

8. Thosar, Madhukar Ramchandra. A study on the development of intra-ovarian maturation of sperms, fecundity and spawning periodicity of some fresh water fishes. Nagpur University.

9. Vanithakumari, G. Effect of gonadal hormones on the reproductive and accessory gland tissues. University of Madras.

Medical Sciences

1. Ghosh, Suchitra. Studies on the excitability of developing avian brain. University of Calcutta.

2. Naidu, N.R. Gopal. Liver cancer—an experimental study: Sequential, histological, histochemical and biochemical studies using azo dyes and aflatoxin B₁ as carcinogenus. Post Graduate Institute of Medical Education and Research, Chandigarh.

Agriculture

1. Badaya, Satya Narain. To study the effect of physical and chemical mutagens with special reference to oil and protein content in soyabean, *Glycine max* L. University of Udaipur.

2. Baldev Singh. Genetic analysis and stability parameters in radish, *Raphanus sativus* Linn. Meerut University.

3. Bhardwaj, Satish Chandra. Studies on the bionomics, external morphology and control of the whitefly, commonly infesting tomato crop in Rajasthan with special reference to their coincidence with leaf curl disease. University of Udaipur.

4. Bhatnagar, Shashi Kumar. Combining ability and gene action studies in the inheritance of quantity and quality of oil in linseed, *Linum usitatissimum* L. University of Udaipur.

5. Chakrabarti, Kamalaksha. (1) Breeding olitorius jute for high yield and resistance to premature flowering; (2) Anthocyanin pigmentation pattern in *Hibiscus cannabinus* and the mode of its inheritance; and (3) Inheritance of seed number and seed size in the crosses between large seeded and small seeded *Hibiscus cannabinus* varieties. University of Calcutta.

6. Chandel, Sam Singh. An econometric study on the estimation of the yields of food crops and components of income and price elasticities of demand for food in U.P. Kanpur University.

7. Deshmukh, Trimbak Madhavrao. Exploitation of multiline (varied genotype) association in maximization of

cotton yield under dry land cultivation. Punjabrao Krishi Vidyapeeth.

8. Gaur, Prem Chandra. Studies on genetic divergence and components of some yield and quality characters in *Solanum tuberosum* L. Meerut University.

9. Hinge, Bhaurao Jayaram. Study of impact of agro-industry on development of agriculture with special reference to sugarcane farming in Sangli region of Maharashtra. Mahatma Phule Krishi Vishwavidyalaya.

10. Jaimini, Satya Narain. Genetic analysis of protein, tryptophan yield and its components in wheat, *Triticum aestivum* L. University of Udaipur.

11. Mahrishi, Chandra Mohan. Seed production, germination and storage studies in *Daucus carota* L. University of Udaipur.

12. Mulmule, Manohar Gajananrao. Agricultural finance by commercial banks; Retrospects and prospects. Punjabrao Krishi Vidyapeeth.

13. Muralia, Ram Narayan Lal. Effect of B-nine and water stress on plant growth, yield components and oil content of linseed, *Linum usitatissimum* Linn. University of Udaipur.

14. Panwar, Jagannath Singh. Effect of short duration agricultural training on farmers' learning. University of Udaipur.

15. Pawar, Suresh Chander. Studies on the evaluation of genetic stock and selection of suitable parents for developing synthetics in sun flower (*Helianthus annuus*). Kanpur University.

16. Satya Vir Singh. Nutritional studies on onion, *Allium cepa* L. Meerut University.

17. Sharma, Gopal Sharan. Studies on the relative mutagenic efficiency of physical and chemical mutagens and their combination in guar, *Cyanopsistetra gonoloba* toub (L). University of Udaipur.

18. Sharma, Prakash Mohan. Projections of demand for and supply of selected agricultural commodities in Rajasthan. University of Udaipur.

19. Shinde, Vijay Kumar. Uptake, translocation and accumulation of phorate and phosphamidon residue toxins in some vegetables. University of Udaipur.

20. Srinivasan, C.S. A study on biparental mating in relation to certain quantitative characters in bajra, *Pennisetum typhoides* S & H. Meerut University.

21. Subey Singh. Water and nitrogen semi dwarf utilisation efficiency of dwarf wheats under artificially mulched soil conditions. Meerut University.

22. Tambar, Heera Nayan. Occurrence of *Shigella* in milk and food products. University of Udaipur.

23. Tripathi, Hari Narayan. Studies on the optimum plant population of dwarf varieties of wheat in relation to nitrogen fertilisation. Kanpur University.

Veterinary Science

1. Das, Saumendranath. Studies on blood biochemical changes in dogs with insulin resistant diabetic condition. University of Calcutta.

2. Raisinghani, Prem M. Observations on *Trypanosoma evansi* (Steel 1885; Balbiani 1888) infection in camels in Rajasthan. University of Udaipur.

Additions to A.I.U. Library

Australian Vice-Chancellors' Committee, Canberra. *Lease for overseas conferences-academic staff*. Canberra, Author, 1977. 15 p.

Belok, Michael V., ed. *Ethnicity, women and education*. Meerut, Anu Prakashan. xvi, 246 p.

— and Shoub, Ralph, ed. *Sex, race, ethnicity and education*. Meerut, Anu Prakashan. 367 p.

Berte, N R., ed. *Individualizing education through contract learning*. Alabama, University of Alabama Press, 1975. xii, 192 p.

Carnegie Council on Policy Studies in Higher Education, Berkeley. *Federal role in post-secondary education: A report*. San Francisco, Jossey-Bass, 1975. xi, 97 p.

— *Low or no tuition: The feasibility of a national policy for the first two years of college*. San Francisco, Jossey-Bass, 1975. viii, 88 p.

— *Making affirmative action work in higher education*. San Francisco, Jossey-Bass, 1975. xv, 272 p.

— *Progress and problems in medical and dental education: A report*. San Francisco, Jossey-Bass, 1976. xii, 178 p.

Eble, Kenneth Eugene. *Craft of teaching*. San Francisco, Jossey-Bass, 1976. xi, 179 p.

Entwistle, Harold. *Class, culture and education*. London, Methuen, 1977. x, 214 p.

Garbarino, Joseph W. and others. *Faculty bargaining in public higher education: A report of the Carnegie Council on policy studies in higher education*. San Francisco, Jossey-Bass [c 1977] viii, 191 p.

Gella, Aleksander, ed. *Intelligentsia and the intellectuals: Theory, method and case study*. London, Sage, 1976. 235 p.

Gollattscheck, James F. and others. *College leadership for community renewal*. San Francisco, Jossey-Bass, 1976. xi, 160 p.

Hsueh, S.S. ed. *Social sciences and national development: The Southeast Asian experience*. Delhi, Abhinav, 1977. 138 p.

Jayaprakash Narayan. *Towards total revolution*. 4 V. Bombay, Popular, 1978.

VI. Search for an ideology, cli. 268 p.

V2. Politics in India. 307 p.

V3. India and her problems. 193 p.

V4. Total revolution. 226 p.

Karabel, Jerome and Halsey, A.H. *Power and ideology in education*. New York, Oxford University Press, 1977. xi, 670 p.

Kautsky, John H. *Patterns of modernising revolutions: Mexico and the Soviet Union*. London, Sage (c 1975) 59 p.

Lakshmana C. *Depressed group students: Scheduled castes in Andhra Pradesh*. Trivandrum, College Book House, 1977. x, 138 p.

Lal, Sheo Kumar. and Nahar, Umed Raj. *Higher education: Scheduled castes and scheduled tribes*. Jodhpur, Jain, 1977. 345 p.

Loye, David. *Leadership passion: A psychology of ideology*. San Francisco, Jossey-Bass, 1977. xix, 249 p.

McHenry, Dean E. and others. *Academic departments: Problems, variations and alternatives*. San Francisco, Jossey-Bass, 1977. xviii, 240 p.

McIntyre, Donald and others, ed. *Investigations of microteaching*. London, Croom Helm (c 1977) 269 p.

Miller, Theodore K. and Prince, Judith S. *Future of students affairs*. San Francisco, Jossey-Bass, 1976. xviii, 220 p.

Molke, Konrad Von and Schnevoigt, Norbert. *Educational leaves for employees: European experience for American consideration*. San Francisco, Jossey-Bass, 1977. xvi, 269 p.

Peterson, Richard A., ed. *Production of culture*. London, Sage, 1976. 144 p.

Sable, Alan. *Education in Orissa: A study in selection and allocation process*. Delhi, S. Chand, 1977. viii, 281 p.

Sri Aurobindo and the mother on education. Pondicherry, Sri Aurobindo Ashram, 1973. 168 p.

Stephens, Michael D. and Roderick, Gordon W., ed. *Higher education alternatives*. London, Longman, 1978. vii, 176 p.

Verma, Rajendra. *Educational planning and poverty of India: A comparative study 1944-77*. Delhi, Lancers, 1978. v, 202 p.

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CLASSIFIED ADVERTISEMENTS

UNIVERSITY OF COCHIN

Notification

No. Ad. AI. 54/77

Applications in the prescribed form are invited from qualified candidates for appointment as 1) Instrumentation Engineer on Rs. 850-1450 and 2) Junior Engineer/Scientist on Rs 600-1250 in the Central Instrumentation and Services Laboratory of the University.

Qualification

Post No. 1. a) first class Bachelor's Degree in Engineering with specialisation in Electronics or Instrumentation or its equivalent in Instrumentation Engineering. b) Minimum of 5 year's experience as an Instrumentation Engineer in Industry/Defence Organisation/Instrumentation and Service Laboratory/Research and Development Laboratory.

Post No. 2. a) First class Bachelor's Degree in Engineering with specialisation in Electronics or instrumentation or its equivalent in Instrumentation Engineering. b) Minimum of 3 year's experience as an Instrumentation Engineer in Industry/Defence Organisation/Instrumentation and Service Laboratory/Research and Development Laboratory.

Age limit : Not more than 40 years as on 1-1-1978 for Post No. 1 and not more than 35 years as on 1-1-1978 for Post No. 2.

Registration Fee: Rs. 25/- (Rs. 6.25 for S.C./S.T. Candidates) for Post No. 1 and Rs. 15/- (Rs. 3.75 for S.C./S.T. candidates) for Post No. 2.

The upper age limit will be relaxed by 5 years for persons belonging to Scheduled Castes/Scheduled Tribes and by 3 years for persons belonging to backward classes.

The application forms with further particulars can be had from the office of the Registrar, University of Cochin, Tripunithura-682301 on payment of Rs. 2/- by Cash or Money Order specifying the purpose in the money order coupon. If the purpose of remittance is not given in the money order coupon, it will not be accepted. The receipt of remittance should be attached to the requisition for the forms.

The candidates will have to appear for an interview, if called for at the place which will be notified later, at their own cost.

The completed applications should reach the University office on or before 31-7-1978

Appointments to the post will be made strictly in accordance with Section 6(2) of the Cochin University Act, 1971 (Act 30 of 1971) which enjoins that in making appointments to posts in any service class or category under the University, the University shall *mutatis mutandis* observe the provisions of Clauses (a), (b) and (c) of Rule 14 and the provisions of Rules 15, 16 and 17 of the Kerala State and Subordinate Service Rules as amended from time to time.

REGISTRAR

SRI VENKATESWARA UNIVERSITY

Applications are invited in the prescribed form for the following posts in the University Service on or before 24-7-1978.

S. No.	Post & Department	No. of posts	Specialisation
1	2	3	4
I. S.V.U. COLLEGE OF SCIENCES, TIRUPATI			
1.	Professor of Botany	One	Preferably Virology
2.	Reader in Chemistry	One	Organic
3.	Lecturer in Bio-Chemistry	One	
4.	Professor of Geology	One	
5.	Lecturer in Geology	One	
6.	Lecturer in Psychology	One	Community Psychology
7.	Lecturer in Statistics	One	Data Analysis
8.	Professor of Zoology	One	Comparative Physiology/Neurophysiology
9.	Reader in Zoology	One	
10.	Lecturer in Zoology	One	Reproductive Biology
11.	Lecturer in Geography	One	Geomorphology
12.	Lecturer in Physics	One (Ty)	
II. S.V.U. COLLEGE OF ARTS, COMMERCE & LAW, TIRUPATI			
1.	Professor of Law	One	
2.	Professor of Commerce	One	
3.	Lecturer in Commerce	One	
4.	Reader in Education	One	
5.	Readers in Economics	Three	Mathematical Economics & Statistics/Macro-economic Theory/Monetary Economics Symbolic Logic/Mathematical Logic/Philosophical Analysis
6.	Reader in Philosophy	One	One in Family Planning One in Public Health
7.	Lecturers in Population Studies	Three (1 Ty)	
8.	Reader in Sanskrit	One	
9.	Professor in Tamil	One (Ty)	
9-A.	Lecturer in Telugu	One (Ty)	
10.	Lecturer in German	One	
11.	Deputy Librarian-Cum-Reader	One	
12.	Professor in Fine Arts	One	
13.	Lecturers in Fine Arts	Two	
14.	Reader in Vietnamese Language (Area Studies Programme)	One	
III. S.V.U. P.G. COURSES, CUDDAPAH			
1.	Reader in Public Administration	One	
2.	Lecturer in Public Administration	One	
3.	Reader in Commerce	One	
IV. S.V.U. P.G. COURSES, KURNOOL			
1.	Lecturer in Economics	One	
2.	Reader in Quality Control and Operations Research	One	
V. S.V.U. P.G. COURSES, KAVLI			
1.	Reader in Economics	One (Ty)	
2.	Lecturer in Economics	One	
3.	Lecturer in Commerce	One (Ty)	
VI. S.V.U. COLLEGE OF ENGINEERING, TIRUPATI			
1.	Readers in Civil Engineering	Two (1 Ty)	One Post : Public Health & Environmental Engineering
2.	Lecturers in Civil Engineering	Two (1 Ty)	
3.	Lecturer in Geology (for the Department of Civil Engineering)	One (Ty)	
4.	Professors in Mechanical Engineering.	Two	Applied Thermo-science/ Machine Design/Production/ Industrial Engineering/ Industrial Engineering or Management

1	2	3	4
5. Lecturers in Mechanical Engineering	Two		
6. Professor in Electrical Engineering	One	Power Systems/Control Systems	
7. Reader in Electrical Engineering	One	Control Systems/Power Apparatus/Systems	
8. Lecturers in Electrical Engineering	Two		
9. Professor of Electronics and Communication Engg.	One	Electronic Instrumentation/Communication Systems	
10. Readers in Electronics and Communication Engg.	Two	1. Electronic Instrumentation/Communication Engg. 2. Digital Electronics	
11. Reader in Chemical Engg.	One		
12. Lecturers in Chemical Engg.	Two		
13. Lecturers in Humanities	Two	Language and literature/History of Science & Technology/Industrial Psychology/Philosophy/ (Modern logic/Philosophy of Science)	
14. Lecturer in Mathematics	One		
15. Lecturer in Physics	One		
16. Lecturer in Chemistry	One		

Scale of Pay

- Professor: Rs. 1500-60-1800-100-2000-Assessment-125/2-2500
- Reader : Rs. 1200-50-1300-60-1900
- Lecturer : Rs. 700-40-1100-50-1600

All the above posts carry D.A. etc. at the University rates. There will be reservations for S.C./S.T./B.C. candidates for LECTURERS' posts according to U.G.C./State Government guidelines.

The prescribed application form together with the prospectus can be had from the Registrar, Sri Venkateswara University, Tirupati-517502, Andhra Pradesh, on payment of Rs. 5/- either by Andhra Bank Challan or State Bank of India Challan in favour of the Registrar, Sri Venkateswara University, Tirupati-517502, Andhra Pradesh.

The University reserves to itself the right to fill or not to fill any posts; to relax qualifications prescribed therefor when candidates with prescribed qualifications are not available and to consider and appoint persons who may not have applied.

M.J. KESAVA MURTHY
REGISTRAR

DIBRUGARH UNIVERSITY DIBRUGARH

Advertisement No: 4/78

Applications are invited for the following posts:

- Reader in Life Sciences—1 (One) Post.
- Lecturer in Life Sciences—1 (One) Post.

Scale of Pay

Reader :—Rs. 1200-50-1300-60-1900 (Revised).
Lecturer: Rs. 700-40-1100-50-1600 (Revised).

The posts carry usual allowances admissible under the University rules in force from time to time and the incumbents will be eligible for Contributory Provident Fund and Gratuity on confirmation as per rules of the University.

Essential Qualification

(1) For Readers: Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in; (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials,

At least five years experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent positions.

(2) For Lecturer (a) A Doctorate's degree or research work of an equally high standard, and (b) consistently good academic record with 1st or high 2nd class (B in the seven point scale) Master's degree in a relevant subject or an equivalent degree of a foreign University.

The degrees in (a) and (b) above should be in relevant subject.

Provided that if the Selection Committee is of the view that the research work of candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctorate degree or equivalent research work is not available or is not considered suitable, a person possessing a consistently good academic record (weightage being given to M. Phil. or equivalent degree or research work of quality) may be appointed provided he has done re-

search work for at least two years or has practical experience in a research Laboratory/Organisation on the condition that he will have to obtain a Doctorate degree or given evidence of research work of equivalent high standard with five years of his appointment, failing which he will not be able to earn future increments until he fulfils those requirements.

Specialisation preferred

Reader for Life Sciences.

Specialisation at M.Sc. level—Botany, Biology, Life Sciences.

Preferable specialization—Eco-Physiology General Plant Physiology.

Lecturer for Life Sciences

Specialisation at M.Sc. level—Zoology, Biology, Life Sciences.

Preferable specialization—Parasitology (Helminthology).

Seven copies of applications in plain papers giving full bio-data including (1) Name in full (in block letters); (2) Father's name; (3) Date of birth by the Christian era; (4) (a) Permanent residence and address (in full) (b) Present address (in full); (5) Present occupation, if any, and name of employer; (6) present salary drawn (if any) (7) Detailed academic career with mark-sheets and subjects of studies (including Honours) in degree and post-graduate course from Matriculation/Higher Secondary/High School Leaving Certificate Examination onwards and copies/reprints of research contributions; (8) Name and address of two referees not related to the candidate together with an application fee of Rs. 5 (Rupees five) by CROSSED INDIAN POSTAL ORDER drawn in favour of the Registrar, Dibrugarh University, should be sent in an inner-sealed cover superscribed "Application for the post of (Name of the post applied for), Advertisement No. 4/78/ enclosed in an outer cover addressed to the Registrar I/C., Dibrugarh University, Dibrugarh to reach him not later than the 20.7.78.

Those candidates who have applied in response to this University Advertisement No. 1/78 need not apply again.

The number of this advertisement and name of the post applied for must be referred to in the application. Persons in employment should apply through proper channel or with a no objection certificate from the present employer. All reprints of the research papers published must be attached.

Applications not in conformity with the above requirements will not be entertained.

Candidates will be required to appear at an interview if and when called for. Candidates called for interview for the post of Reader will be given actual T.A. (Second Class Railway fare) according to the rules of this University.

K. Sarma
REGISTRAR I/C

ALIGARH MUSLIM UNIVERSITY

Advertisement No. 14/78-79

Applications on the prescribed form are invited for the following posts:

1. Professors of Mechanical Engg. (Two posts—one each in Fluid Mechanics and Combustion Engg.) Scale Rs. 1500-60-1800-100-2000-125/2-2500 plus allowances.

Qualifications

(a) A first or high second class Basic Degree in Engineering.

(b) Ordinarily Postgraduate Degree in Engineering.

(c) Ordinarily 10 years' experience of which 5 years' should be in a position of responsibility in teaching in an Engineering Institution of a Degree Standard and/or research.

Area of Specialization

Fluid Mechanics (I) and Combustion Engineering (I)

Desirable

Published research work in reputed journals. Teaching experience to postgraduate classes.

2. Readers in Mechanical Engineering (4 posts—Fluid Mechanics, Machinery and Combustion Engg.) Scale Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications

Basic Degree in Mechanical Engg. and seven years experience or Master's Degree with five years experience or Doctorate with two years experience of which two years of the experience should be in teaching in an Engineering Institution of Degree standard and/or research.

Area of Specialization

Fluid Mechanics, Machinery and Combustion Engineering.

Desirable

Published research work in reputed journals. Teaching experience to postgraduate classes.

3. Lecturers in Electrical Engineering (Some temporary posts) Scale Rs. 700-40-1100-50-1600 plus allowances.

Qualifications

Ordinarily First class Bachelor's Degree in Electrical Engineering or Post-graduate qualification in Electrical Engineering.

Prescribed application forms and instructions may be had from the Deputy Registrar (Executive) either personally or by sending a self-addressed envelope of 23x10 cm. Last date for receipt of applications is 5th August 1978. Incomplete applications and those received late may not be considered.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T.A. equal to one single Second Class Railway fare only.

Jamalur Rahman
REGISTRAR

UNIVERSITY OF RAJASTHAN JAIPUR

Advertisement No. 8/78

Applications are invited (through proper channel in case of those already in employment) so as to reach this office on or before 31st July, 1978 in the prescribed form available from the

Registrar's office on pre-payment of Rs. 4 (Rs. 3 extra in case required by post) for the undermentioned posts which are at present temporary but likely to continue.

I. For University Service & Instrumentation Centre

1. Professor-1 in the grade of Rs. 1500-60-1800-100-2000-125/2-2500.

2. Principal Scientific Officer—1 in the grade of Rs. 1500-60-1800-100-2000-125/2-2500 Or 1500-60-1800-100-2000.

3. Senior Scientific Officer—1 in the grade of Rs. 1100-50-1600.

4. Scientific Officer—2 in the grade of Rs. 700-40-900-EB-40-1100-50-1300.

II. For Special Assistance Programme in Philosophy

1. Professor of Logic and Philosophy of Science-1 in the grade of Rs. 1500-60-1800-100-2000-125/2-2500.

2. Reader in Logic—1 and Reader in Indian Philosophy—1 in the grade of Rs. 1200-50-1300-60-1900.

3. Shastri (Trained in Navya Nayaya and/or Vyakaran)-1 in the grade of Rs. 1200-50-1300-60-1900.

4. Lecturer in Philosophy of Law/Philosophy of Science-1 in the grade of Rs. 700-40-1100-50-1600.

5. Research Associates: Indian Philosophy-1 Logic & Philosophy of Science—1 and Philosophy of Law/Social Philosophy/Political Philosophy/Moral Philosophy-1 in the grade of Rs. 700-40-900-EB-40-1100-50-1300.

III. For University Leadership Project in Political Science

Reader: 1 in the grade of Rs. 1200-50-1300-60-1900.

2. Lecturer (Translation)—1 in the grade of Rs. 700-40-1100-50-1600.

Details of qualification etc. may be obtained alongwith the prescribed application form or separately as the candidate may desire. D.A. and other allowances/benefits will be admissible as per rules of the University. Candidates called for interview will have to appear at their own expense.

REGISTRAR

ALIGARH MUSLIM UNIVERSITY

Advertisement No. 15/78-79

Applications on the prescribed form are invited for the following posts:

1. Reader in Urdu, Scale Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications

ordinarily required

(a) A first or a high second class Master's Degree in the subject concerned of an Indian University or an equivalent foreign qualification; (b) A research degree of a doctorate standard or published work of a high standard; and (c) Atleast five years experience of teaching postgraduate classes and some experience of guiding research.

2. Readers in Education (Temporary but likely to become permanent) Scale Rs. 1200-50-1300-60-1900 plus allowances;

Qualifications

ordinarily required

(a) A first or a high second class Master's Degree in the subject concerned of an Indian University or an equivalent foreign qualification; (b) A research degree of a doctorate standard or published work of a high standard; and (c) Atleast five years experience of teaching postgraduate classes and some experience of guiding research.

3. Lecturers in Education (Temporary but likely to become permanent) Scale Rs. 700-40-1100-50-1600 plus allowances.

Qualifications

(a) A Doctor's Degree or research work of an equally high standard; and (b) consistently good academic record with first or high second class (B in the the seven point scale) Master's Degree in a relevant subject or an equivalent degree of a foreign University.

Having regard to the need for developing interdisciplinary programmes, the Degree in (a) and (b) above may be in relevant subjects.

Desirable

(i) Experience of teaching in a training College/Department of Education,

(ii) Master's Degree in a School subject.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable; a person possessing a consistently good academic record (weightage being given to M.Phil. or equivalent degree or research work of quality) may be appointed provided he has done research work for atleast two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's Degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Prescribed application forms and instructions may be had from the Deputy Registrar (Executive) either personally or by sending a self-addressed envelope of 23x10 cm. Last date for receipt of applications is 5th August 1978. Incomplete applications and those received late may not be considered.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T.A. equal to one single Second Class Railway fare only.

Jamalur Rahman
REGISTRAR

BANARAS HINDU UNIVERSITY

Corrigendum to Notification Dated June 1, 1978

Item No. 3(b)(4) Number of vacancies in Readers in Political Science may be read as three instead of two (two posts are under Area Study Programme on Nepal).

Item No. 3(c)(5)—Lecturer in Political Science (three)—One post is as Lecturer (in Nepali Language) under Area Study Programme on Nepal.

The last date for receipt of application in the above cases is extended up to July 25, 1978.

THE UNIVERSITY OF BURDWAN

RAJBATI: BURDWAN

Advertisement No. 1/78-79

Dated, the 4th July, 1978

Applications in the prescribed form are invited for the following posts:

- A. Professor for the Department of Economics in the scale of Rs. 1500-60-1800-100-2000-125/2-2500/-.
- B. Lecturers (3) for the Department of Commerce in the scale of Rs. 700-40-1100-50-1600/- with allowances and other benefits (for A & B) according to University Rules.
- C. Part-time Lecturers (3) and Tutors (2) for the Department of Law Rs. 150/- per month plus consolidated Travelling Allowances according to University Rules.

For A. Minimum Qualifications

1. (a) A Doctor's Degree or published research work of an equally high standard.
And
- (b) Consistently good academic record with First or Second Class (B in the seven point scale) Master's Degree in the relevant subject or an equivalent degree of a foreign University.

2. Additional Requirements

For Professorship

- (i) At least ten year's teaching experience in Post-Graduate Classes;
- (ii) Competence to Plan and supervise Research Project;
- (iii) Publication of sufficient merit.

For B. Minimum Qualifications

1. (a) A Doctor's Degree or published research work of an equally high standard
And
- (b) Consistently good academic record with First or high Second Class (B in the seven point scale) Master's Degree in the relevant subject or an equivalent degree of a foreign University.

SPECIALISATION OR PROFICIENCY REQUIRED

- (i) For the first post
Organisational behaviour/Industrial Psychology/Labour and Industrial

Relations/Manpower Planning and Management of Human Resources/Labour Laws:

- (ii) For the second post
Business Management with special emphasis on Study of Public enterprises;
- (iii) For the third post
Accountancy/Business Finance/Labour and Industrial Relations.

For C. Minimum Qualifications

LL.B. Degree with two years' experience at the Bar.

SPECIALISATION FOR THE POSTS OF PART-TIME LECTURERS

- (i) Interpretation of Statutes and Principles of Legislation;
- (ii) Criminology and Law of Crimes and Procedural Laws;

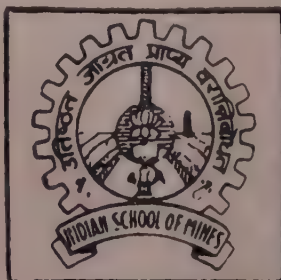
- (iii) Procedural Laws like Rules of Court, Civil Procedural Code, Evidence etc.

The University Council may, on recommendation of the appropriate Selection Committee, waive any of the requirements in view of the candidate's specialised knowledge in the subject. The choice of the Committee may not necessarily be confined to those who apply formally.

For application form and other information apply to the Registrar with self-addressed stamped (O 40ps) envelope (9" x 4").

Last date for submission of applications with the requisite fee of Rs. 5/- is July 22, 1978.

REGISTRAR



Indian school of Mines

Dhanbad-826004

No. 615007/78

Dated June 22, 1978

Admission to Post-Graduate Programme 1978-79

(Supplementary Notification)

1. Applications are invited from candidates possessing requisite qualifications for admission to the following additional post-graduate programmes being offered at the Indian School of Mines, which is deemed to be a University under the University Grants Commission Act, from 1978-79.

Programme

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2.1 Preference will be given to **sponsored** candidates. (Sponsorship in this context means retention of lien on post and grant of suitable allowance). Application of sponsored candidates should carry suitable endorsement by the employer.

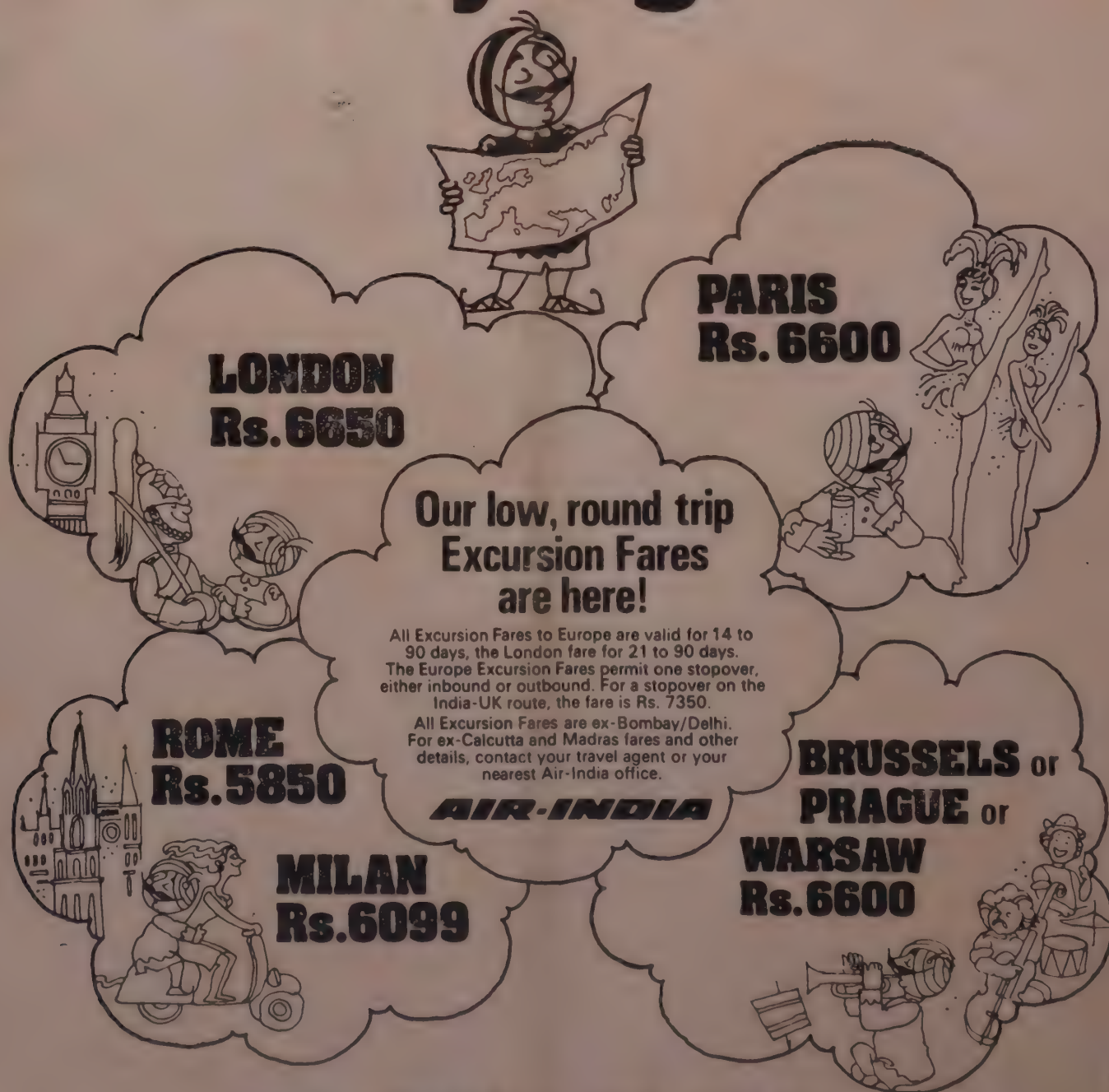
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3.1 **Procedure for applying :** Application forms along with the Information write-up for Postgraduate students can be obtained by sending a crossed Postal Order for Rs. 5/- (Rupees five only) made payable to the Registrar, Indian School of Mines, Dhanbad-826004.

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University lews

A CHRONICLE OF HIGHER EDUCATION & RESEARCH AUGUST 1, 1978 80 PAISE

AICS meets in New Delhi



Mr. Dhanna Singh Gulshan, Minister of State for Education, Social Welfare and Culture, inaugurating the meeting of the All India Council of Sports in New Delhi. On his left are Field-Marshal S.H.F.J. Manekshaw, President of the Council and Mr. Bhalindra Singh, Vice-President.

BHOPAL UNIVERSITY BHOPAL

Advertisement No. 2/78

Applications on the prescribed form (obtainable free by sending a self addressed envelope of 24 x 12 cms. size bearing stamps worth 35 paise) are invited for the following temporary posts of the Institute of Correspondence Courses of this University, in the scales mentioned against each with benefits of allowances as admissible under the University Rules:

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(3) Lecturer in Commerce : Two posts
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QUALIFICATIONS

For S.No. (1) and (2): (i) Atleast a second class Master's Degree in Arts or Social Science or Commerce with atleast 50% marks (B in seven point scale) or equivalent Degree of a Foreign University.

(i) A Doctor's Degree or published work of an equivalent high standard.

(iii) Atleast 50% marks at the Bachelor's Degree examination on the basis of which Division is awarded at the Degree level by the University.

(iv) Atleast 50% marks at the Higher Secondary/Intermediate/Pre - University Examination as the case may be.

For S. No. (3) (i) Atleast a second class Master's Degree of an Indian University or an equivalent degree from foreign University in Commerce.

(ii) A Doctor's Degree or published work of an equally high standard.

Provided that if a candidate possessing a Doctor's Degree or equivalent published work is not available or is not considered suitable, a person possessing a consistently good academic record, (due weightage being given to M. Phil or equivalent degree or research work of quality) may be appointed on the condition that he will have to obtain a Doctors' degree or give evidence of published work of equally high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Experience: (i) In the case of Professor the experience of Teaching of Postgraduate classes shall be atleast 10 years along with 7 years administrative experience in a position involving supervision and control in an Educational Institution or Govt. Office.

In the case of Reader at least 5 years teaching experience of postgraduate classes alongwith 5 years administrative experience in a position involving supervision and control in Educational Institution.

In the case of Lecturer Teaching experience of Postgraduate classes of about 2 years in a College or in University Department.

(ii) Familiarity with the procedure and working of the University or the administration of a College or an Institution of Correspondence Courses will be preferable in the case of Professor and Reader.

(iii) Working knowledge of Hindi is essential for all posts.

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Qualifications and age may be relaxed by the Ex-Council on the recommendation of the Selection Committee in cases of Scheduled Castes/Scheduled Tribes candidates or those who are otherwise found suitable.

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Scheduled Castes/Scheduled Tribes candidates will be preferred.

Persons already in service must apply through proper channel. They may send an advance copy of their application within the due date and should bring a 'No Objection Certificate' from their employer, when called for interview.

Candidates shall have to appear for an interview at their own cost and produce their original Degrees, Certificates etc. at that time.

Applications accompanied with a crossed Indian Postal Order for Rs. 10.00 in the case of Professor, Rs. 7.00 in the case of Reader and Rs. 5.00 in the case of Lecturer, in favour of the Registrar, Bhopal University, Bhopal should reach the undersigned by name on or before 21.8.78.

M.G. Patthankar
REGISTRAR

UNIVERSITY OF BOMBAY Department of Computer Science

Applications are invited for two posts of Reader and two posts of Lecturer in the University Department of Computer Science in the grades of Reader:—Rs. 1200-50-1300-60-1900 and Lecturer:—Rs. 700-40-1100-50-1600. The posts carry the benefits of Provident Fund, Dearness Allowance, House Rent Allowance and Compensatory Local Allowance at the rates sanctioned by the Executive Council from time to time. A higher starting salary may be given to a person possessing high qualifications. The appointments will be made on probation for two years in the first instance. Other things being equal preference will be given to candidates from backward classes. The posts of Lecturer are reserved for candidates belonging to scheduled castes and scheduled tribes and will be filled up by appointment of such persons only as shall satisfy the requirements regarding qualifications, experience etc. laid down for the posts, provided, however, that if no candidate is available from the scheduled castes and scheduled tribes, the posts will be

filled up by appointment of duly qualified persons from among the other applicants.

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1. Reader

Essential qualification

Good academic record with a doctoral degree in Computer Science or related areas or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

About five years' experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding research work.

Desirable

Adequate research and/or academic experience involving utilization of large computer systems. Some teaching experience will be desirable.

2. Lecturer

Essential qualification

(a) A Doctor's degree or research work of an equally high standard; and

(b) Consistently good academic record with 1st or high 2nd class (B in the seven point scale) Master's degree in a relevant subject or an equivalent degree of a foreign University.

Having regard to the need for developing interdisciplinary programmes, the degree in (a) and (b) above may be in relevant subjects.

The Executive Council may relax any of the qualifications prescribed in (b) above provided that the selection committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard.

Desirable

At least two years' experience of teaching or working in a research and development area related to computer science.

Two copies of the application in the prescribed form, which can be had from the Registrar's Office (Room No. 121), should be submitted so as to reach the Registrar, University of Bombay, Bombay-400032 on or before 21st August 1978.

Candidates called for interview will have to present themselves at their own expense.

Canvassing direct or indirect will be a disqualification.

K.S. Kolge
REGISTRAR

UNIVERSITY NEWS

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AUGUST 1
1978

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Opinions expressed in the articles and reviews are individual and do not necessarily reflect the policies of the Association

Hony. Editor : ANJNI KUMAR

Indian University : A tragedy of small mind

D. P. Verma*

For the last thirty years or so we have been busy analysing the shortcomings in our system of education. There is no dearth of treatises that focus our attention on the various factors and causes responsible for the poor accomplishments of the Indian education system. We are not tired of blaming the erstwhile foreign rulers of devising a system that suited their needs of providing people to man their administrative machinery, mostly at the lower echelons. We have been endlessly crying that the education imparted in our schools, colleges and universities is totally unrelated to our ethos and unsuited to the socio-cultural and economic needs of the country and radical changes are required in it for making it purposeful and all that. And we are still at the debating-end after a lapse of so much time.

There has been enough of surface-scratching and this has led us nowhere. Perhaps the time has come for us to realise that the fault lies not in the system alone but primarily in those of us who are actually operating the system, of whatever worth it is. Merely counting and recapitulating the deficiencies of something that was foisted on us cannot for all times to come be used as an alibi for our own opaqueness in this sphere. Our incapacity to devise something better and what is worse, our lack of will to implement whatever new has been thought of, are characteristic of our behaviour-pattern.

As discerning people we had recognised the in-built shortcomings in the system of our education long years ago. But then we had been harping on its faults alone. Something that is better has been eluding us so far. The pity of the matter is that whatever we had inherited, instead of effecting any improvements in it, we have, over the years, been responsible for its deterioration to abysmal depth. The system of our education admittedly is bad enough but the men and women who adorn it have at least one thing to their 'credit'. They have operated it in such a manner that it has lost for all time to come whatever little potentiality it had possessed to produce some good. Today the society finds itself in an unenviable position in this very vital sphere. The existing system of education stands wholly discredited and is not in a position to serve our needs; the hope of any new, worthwhile and acceptable system coming into being is receding farther and farther because of our own incapacities.

The causes of the paralysis afflicting our universities and colleges are to be found not so much in the out-of-date structure of the courses of study, or the methods of imparting education, or its lack of relevance to our needs and requirements. All these and

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many more such causes are well known and have been analysed. But no remedy has become effective because of some deep-rooted maladies. As a matter of fact, no amount of external application of remedial measures would bring about a change in the situation. The tragedy of many an institution of higher education in our country is the increasing infiltration of the small mind.

The proliferation of the universities and more so of the colleges, on considerations which are mostly extra-academic, has added to the gravity of the situation. During the last few years, the number of institutions of higher education grew considerably but the requisite calibre fell far short of the requirements. Some years back, in a particular context, we felt concerned about a possible political vacuum; but no one has in the least cared to realize the implications of an enormous 'academic vacuum' that the country is facing at present. And it is growing, despite the sizeable growth in number of universities and colleges.

There was a time not very long years ago when men of eminence, who were inspired by certain ideals lead and provided directions to the universities and colleges. Their stature and attainments inspired the young, who entered the portals of those institutions. Today the academic land-scape is mostly bereft of such eminent and inspiring personalities. The rot in the system today is not so much in its unresponsiveness to the changing needs of the country. What is to be bemoaned is the entry into these institutions of higher education of men and minds whose mental dimensions are very limited and narrow.

'Pursuit of excellence' this phrase is used very often in the context of the functioning of the universities. This is the real objective and goal. But try to gauge the channels in which the potentialities of those supposed to be engaged in this pursuit are directed! They embroil themselves readily in petty squabbles, and pettier affairs for most of the time. What these 'prisoners of pettiness' have accomplished is so obvious. Small minds and higher goals do not make good companions. Persons in senior academic positions in universities on ceasing to be members of some university authorities, or on losing an election have thought and behaved as if they have lost the world.

It is said that men of academic eminence in the universities elsewhere shun administrative tasks. Here a position in administrative hierarchy and participation in administrative affairs is regarded as the very yardstick of a person's importance and prestige. The demand for participation in administrative matters at different levels has gained such a momentum in the universities that one begins to wonder whether teaching and research have any meaningful place in these institutions. Perhaps the 'Moghul-like-manner' of managing the departments set in motion a reaction and the demand for faculty participation in administrative affairs has become irresistible. Certain forces and factors are now busy generating an environment which would be conducive to anything but pursuit of academic excellence. Our system of education is engulfed by petty-fogging and what is witnessed is the adventure of small deeds, of routine

teaching and uninspiring research. If the students agitate and win a point like the abolition of internal assessment system, then is there any need to provide more evidence of the low level to which the system has sunk.

Attempts to re-structure the courses of study have surprisingly been resisted by the teacher, especially of the colleges. This resistance reveals quite a lot. We want to persist not only with the old courses but also with routine teaching. The havoc wrought in the system of education by cheap notes and guides has not been fully recognised, for neither attempts have been made to eradicate the evil, nor provisions available in the statutes etc. have been fully enforced. One is amazed to see that guides and notes are available even for pre-middle and middle classes. A student who at every level depends on cheap notes and whose sole concern is to have a stamp of authenticity of having acquired a degree cannot by any measure be regarded to acknowledge his debt of gratitude to the teacher, who has in a peripheral manner helped him to realize his object. Everyone is for short-cuts to success, more so the students, with some exceptions indeed. The faculty has failed to inculcate or promote eagerness among the students to read anything beyond the narrow limits of their courses of study for examinations. The exercise to expand our mental dimensions does not fit into the present day conditions. There is so much else to do. The pattern today is different and it is difficult not to be in line with the changing situation. The class-room gossip is a sure way to have acceptability from the students and a still more popular step is the cutting of the classes, for sipping cups of coffee is more refreshing than the mere repetition of old lessons.

What stirs us, what raises storm within us is some pecuniary gain here and there. The fights are for positions and hardly for any principles; cheap populism has caught our fancy to the extent perhaps not seen before on the campuses. And if decisions in the universities come to be based on the concept of such populism, as sometimes it has happened, then the consequences are going to be shattering, devastating. Not only this. The haste and the hurry that is sometimes shown to accomplish the populist moves is just incomprehensible. It seems that there is not much use of what is called dispassionate and in-depth consideration of matters, for such a thing is regarded as an exercise in futility. One rarely finds clash of ideas on the campuses. What is in abundance is the clash of interests. And these are of various types and dimensions. The effort mostly is to promote one's interests by all possible means. The Gandhian principle of means justifying the end has no meaning. Individual and group interests must have their sway, for it is thought that the interest of the institution automatically gets a fillip when the former are subserved and secured. After all the interests of an institution cannot be farther from the interests of a group of people dominating it at a given point of time.

If there is a talk and the Public Accounts Committee of the Parliament has said so, that many

(Continued on page 1086)

Participation of College Teachers in Continuing Education

D. K. Kharwandikar*

AUG 1978

C.F.T.R.I., MYSORE

Higher education and the social change

The ever-increasing complexities of modern life with the explosion of knowledge make it imperative on us to face the problems of education in a wider perspective. Universities which form the centres of higher education can no more develop or encourage the 'elitist' or 'ivory tower' concept of education. They will ill afford to isolate themselves from the social change taking place at a very fast speed. On the contrary these bastions of higher learning should build efficient communication with the society and finish their cloistered tendencies if they are to accomplish the ideal of disseminating knowledge beyond the class-rooms and the campus. "Education is important not only for its intrinsic value but also as a means of speeding up meaningful social change and development of the community."

Genesis of the problem

A few decades ago it was customary to look upon universities as centres of academic or formal education conferring degrees at the end of certain courses after conducting examinations. This resulted in the fact that most of them tended to become merely examination conducting or degree-conferring centres. But now the problem of higher education needs to be viewed from a different broad-based angle. Relevance and excellence are the sine-qua-non of any educational system. The problem in the present crises is as to how it will be possible to make our educational system relevant and useful to every individual in the society. In fact the two aspects of relevance and excellence should go hand in hand for the efficient mobilizing of the society. "If we aim at excellence in the individual we have to aim at it also in society. The university should project itself into the community. All barriers between the acquisition of scientific and technical knowledge and its utilization for the social good must go. Individual development and social responsibility should be guiding stars of university work." The success of higher education thus depends on how far the centres of higher learning keep themselves alive to the sense of social responsibilities.

Concept of continuing education

It is in this context that we have to lend some thought to the concept of continuing education. We have to remember that education is a life-long process which starts working at birth and ends with death. Learning takes place all the time, like breath-

ing, without our being aware of it. Much more fruitful education can be obtained outside the portals of schools and colleges as compared to the on-campus instructions. The centres of higher education should realise this fact and channelize their educational system so as to cater to the needs of the society. The idea of continuing education has, so to say, come of age and has been widely accepted and promulgated by eminent educationists. Sometimes the same idea is expressed by the words 'andragogy' (adult education), non-formal education, further education, open university education etc. although some distinction does exist among these types.

Definition of continuing education

Continuing education is defined as 'a group-learning effort, voluntarily undertaken by persons past adolescence, outside formal school institutions deliberate in purpose, based on the interests and needs of the learner, for the purpose of enrichment and enlightenment.'

(2) Dictionary of education gives the following two meanings :

(i) Any extension of opportunities for reading, study and training to young persons and adults follow their completion of or withdrawal from full-time school and college programmes.

(ii) Education for adults provided by special schools, centres, colleges or institutes that emphasises flexible rather than traditional or academic programmes.

Need for continuing education

The need for adequate implementation of various programmes under continuing education exists in all countries and especially in developing countries like India. In the majority of our educational centres the system of formal education labouring under narrow traditionalism has left untouched a large segment of the population. This has consequently led to the under-functioning of large sections of our society. It is in this connection that the concept of life-long education has been evolved to help people constantly review themselves through education processes. The underlying idea of continuing education is to bring the university and society into closer contact with each other.

Continuing education for whom?

In other words: "what are the aims and objects of continuing education?" "One of the objectives of continuing education programme by universities is to meet the educational need of the community around

*Ahmednagar College, Ahmednagar.

the university, which are not met by other programmes such as the mass media of communication."

Broadly speaking, the following are the aims and objects of continuing education:

- (i) To serve those who have been deprived of educational facilities or drop-outs from schools and colleges.
- (ii) To help people adjust to changes of modern life and to update and upgrade their professional or occupational knowledge and skill.
- (iii) To encourage better methods of thinking and study.
- (iv) To help people find keener interest in fine arts or performing arts, philosophy, literature with a view to enriching their cultural life.
- (v) To promote the optimum functioning of individuals and thus to enable them to realise their full potential and also to enable them to contribute effectively to society.

How can universities be of use ?

The involvement of the universities in catering to the societal needs is very important as seen above and universities will do well to devise various strategies to make higher education a real means of progress. Universities with the help of their personnel and expertise will adopt and carry out phased programmes embracing various disciplines. They may introduce short/intensive/refresher/sandwich/condensed/remedial/content courses in varied branches in accordance with the local needs. These courses have to be problem-oriented and need-based. Universities may also institute some pilot centres if needed for this purpose. Centre of continuing education in the University of Poona has been conducting successfully such short courses for the last few years.

Role of college teachers

At this stage it will be worthwhile to consider the participation of college teachers in the implementation of various programmes for continuing education. In fact there ought to be concerted efforts on the part of the universities and the colleges coming under their jurisdiction to achieve the aims and objects of continuing education. College teachers should be encouraged to undertake various programmes of continuing education so as to enable them to identify the needs of the community amidst which they live. The work of colleges could be co-ordinated and supplemented by the University Department of Continuing Education. It is equally true that college teachers should also take initiative in this matter and volunteer their services for the upliftment of the hitherto neglected social strata. Thus success of the scheme largely rests on the effective collaboration between the university and the teaching community.

(a) A number of teachers have mastery over various disciplines and branches of learning. Such teachers may fruitfully use their talents for the benefit of the concerned social groups.

(b) College teachers may provide off-campus instructions by visiting the social groups that need educational enlightenment. This can be conveniently

done on holidays and during vacations, and sometimes even by conducting evening or night classes.

(c) They may arrange lectures, prepare questionnaires, take sample surveys and hold group meetings and get acquainted with local problems.

(d) Colleges located in the mofussil areas will be in a better position to keep themselves in touch with rural and backward areas where even the literacy ratio is below average. I would of course not propose that college teachers should take out literacy campaigns, but they can help the individuals and institutions that work for removing illiteracy.

(e) Teachers may select anyone of the programmes sponsored by the Universities or frame an altogether new one according to local needs and carry it through successfully. They may also efficiently organise summer schools, seminars, symposia as a part of continuing education.

(f) Even those teachers who are somewhat reluctant to leave their headquarters will be of some help to the cause of continuing education. They may form advisory committees consisting inter-alia representation from the selected social group and give their precious advice from time to time.

(g) With the possibility of the advent of 'autonomous college' the college teachers will have ample scope to exploit their talents in the field of continuing education. They can frame conveniently new courses which will better meet the local needs and this will better cater to the social requirements.

These are only broad guidelines and an imaginative eye will be able to propose a number of other ways and means.

Organisational arrangements

- (i) Fortunately centres for continuing education have been instituted in several universities in recent past. It is a desideratum that affiliated colleges should also start centres for continuing education at an early date.
- (ii) Such a centre at the college level should have some representative from areas where the activities of continuing education are to be focussed.
- (iii) The centre in the college should work in collaboration with other centres or institutions and the university department of continuing education. It should be put in charge of some teacher who with his resourcefulness will be able to carry out various projects under continuing education.
- (iv) The college centres should be financed by the universities concerned and the U.G.C. It is a relieving feature that the U.G.C. has extended so far substantial help to these activities.

Conclusion

In view of the clarion call for the democratisation of education the teaching community can no more ignore the programmes of continuing education as a powerful instrument of ensuring social justice. And it is hoped that the college teachers will not fail in their pious duty of discharging this social obligation. □

Model University Press

Shyamji Dubey*

A university press, an integral part of a university, is generally a non-profit publishing organization, engaged for the most part in publishing and printing books, journals, proceedings of seminars and conferences of various university departments. The "raison d'être" of the university press is ensuring high standard and quality in the production of publications and thus making its own contribution to the pursuit of serious knowledge. To realize it, a standard university press requires efficient editorial, production, promotion and distribution channels as well sound financial backing and freedom from unnecessary audit objections.

Mostly, university presses are non-profit and subsidized establishments. They generally work on an unrealistic budget and are accountable to some agency—in most cases the university itself or University Grants Commission, Govt. of India or State Governments. The Estimates Committee of the Parliament in 1966 expressed the view that university presses should run on commercial lines. This view was endorsed by the U.G.C. also. On its face, the view expressed by the Estimates Committee and sponsored by the U.G.C. seems quite standing but its implementation is fraught with a number of difficulties. The commercialisation of a university press can be done to a limited extent only so as to ensure that it does not incur losses, continues to offer efficient and quality services and fulfils its goals as a service arm of the university just like the University Library, Computer Centre Instrumentation Workshop etc. No one would dispute the argument that a university press should not turn into a white elephant and become a burden on the university exchequer. However, one has not to forget that howsoever we may wish to commercialise the university press it cannot compete with its counterparts in the open market because of its commitments to the cause of academic excellence and its responsibility of serving the academic community of the university. Thus, it would be totally unrealistic to think of running a university press on completely commercial lines and comparison is to be made with cheap third

grade printing presses, without any financial commitment or subsidy from the University, U.G.C., State Govt. or the Central Government.

Our argument is that while the university press should always strive at achieving financial self-sufficiency into day-to-day working losing the aim of highest standard of printing, it should be considered as an integral part of university set-up and should receive its patronage in the form of subsidies. This financial support is a justified phenomenon not only in India but even in the advanced countries of the world. This support is very essential for ensuring continuous development of university press and for covering the risks against unexpected losses particularly in cases of bringing out scholarly yet commercially non-viable publications. In order to achieve self-sufficiency, university press should formulate the realistic and productive working norms and methodical estimating, costing, job scheduling and efficient use and maintenance of machines, material and manpower. Other important factor is to maintain a very cordial working environment and motivate the workers for achieving greater productivity. Delhi University Press has already formulated and introduced its own realistic production norms and received encouraging support from its workers and due to this scheme the press has shown signs of improvement and marginal profits with a hope to do better in the future. The university press must also be free from unrealistic and impractical audit and financial clutches if it wants to grow and become financially self-sustained organisation. The Vice-Chancellor and other officials should give their active attention for the development of this important facility. Even if the U.G.C., Govt. of India, State Govts. or university has to give some subsidy which will not be out of way, such subsidy or grant for the development of the university press will be a wise spending for the cause of printing and publishing. But at the same time it is the duty of the university press to fulfil the expectations of the academic community by meeting their demand efficiently and economically. University press should not become white elephant on the university exchequer as majority of Govt. of India and State Govt. presses.

The Press is a necessity for any educational organisation and more for a university. Various universities in India have started having their own presses but still majority of the universities are without their own presses. The university without press is totally dependent on the mercy of private presses and often faces difficult problems during urgent and confidential work. It would be better if the Association of Indian Universities immediately in coordination with Universities and public, should establish one efficient press on the lines of Association of American University Press. This press should cater the printing and publishing needs of various universities and save them from the clutches of private monopoly. Press should be within the framework of its overall financial structure, it must operate efficiently without wastes and on no loss basis. □

*Manager, Delhi University Press.

Need for planned Higher Education

The increasing interest in higher education that emerged after the Second World War everywhere in the world had deep roots in the past and would have inevitably led to a gradual expansion and democratization of educational opportunities. But it was the release of social forces arising from new convictions about science, about nationalism, about economic development and about human dignity that in a cumulative form led to a tremendous upsurge of public interest in and support for various forms of higher education. It was in this context that free India witnessed enormous expansion of educational opportunities at all levels, and institutions of higher learning responded quickly to the demand for higher education in humanities,

surate with the role that India was destined to play in the comity of nations, in keeping with her past tradition and genius.

Today, in India we have got 120 universities or equivalent institutions, 4,500 affiliated colleges, 6,40,000 schools, 35 lakhs of teachers and 10 crores of students. The annual expenditure on education is over Rs. 2,500 crores, which is next only to that on defence. We have now in our country the third largest scientific and technical manpower in the world. This massive growth in higher education, particularly in the field of science and technology has contributed substantially to the growth of Indian economy. India today ranks 10th among the top industrialised nations of the world. Over the last 25 years,

The widening scope for the development of our own country and countries abroad offers a great challenge to the educated young-men of India.

The enormous tasks of development which we have undertaken can be accomplished only with the help of intelligentsia of adequate size and competence and of deep commitment to the service of the masses. Its size is important if an impact is to be made on the country as a whole. Its competence is of greater significance specially in the modern world of rapidly expanding knowledge and quick social change. But most important of all is the identification of the intelligentsia with the masses and its commitment to national development.

In the democratic educational set-up of the country, students come from all social strata and both from urban and rural areas. They represent, by and large, the most talented group in their generation. "Student Power" is now a common phenomenon in the western countries as well as in the developing countries. "Student Power" is a reality to be reckoned within almost all countries of the world, and so it is in India. Under the circumstances, higher education, if of the right quality, can greatly accelerate the progress of the nation towards its desired objectives. If on the other hand the quality of higher education is overlooked and it is allowed to expand in an unplanned fashion, the forces of social disunity and disorganisation will be encouraged and will thwart the national progress. It is, therefore, our duty to accord highest priority to the programmes of raising standard of higher education. Obviously, this will require considerable investment of funds and may also need regulation of the growth of new institutions. But mere legislation or funds are not enough to improve quality. This needs leadership of the right type, a band of dedicated teachers identifying themselves with the interest of the students and sustained hard work by better motivated and disciplined students. These are tasks to

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sciences, engineering, medicine and other technical disciplines. The society's need for education as an instrument of growth was combined with the individual's urge for education as a means of self-fulfilment. A significant concomitant of this expansion has been democratization of education. Thus today, more than half of the students enrolled for higher education are the first generation of learners who aspire to play a useful role in the affairs of the nation, in the administration, in the management of industrial enterprises and in the defence of the country. This is a healthy trend and strengthens the foundations of democracy. This has happened because of the foresight of our national leaders who visualised the importance of education as the basis of India's social and economic development commen-

our agricultural output has been doubled and industrial production trebled. Thus, India can be considered to be a developed country in the sense that we have been able to achieve production and technological advancements in almost all fields of scientific, industrial and agricultural production, though it still falls short of the very large requirements of the population. This has been achieved because we have tried to utilise modern education, science and technology as a basis for India's economic development. Today India's scientific and technical manpower is not only capable of meeting her own developmental needs, but Indian scientists and technologists are playing an increasingly important role in helping the developing countries of Asia and Africa in their struggle for achieving economic freedom.

which the authorities, teachers and students have to address themselves.

Education has two objectives, one to provide skill and the other wisdom. Wisdom is a vague thing to be defined. According to Bertrand Russell, "It is a word concerned partly with knowledge and partly with feeling. It should denote a certain intimate union of knowledge with apprehension of human destiny and the purposes of life. It requires a certain breadth of vision, which is hardly possible without considerable knowledge. But it demands, also, a breadth of feeling, a certain kind of universality of sympathy". In his view, "higher education should do what is possible towards promoting, not only knowledge, but wisdom". But, this is not easy to achieve if the effort is too conscious. Perhaps, it can be done more easily by the teacher, by first developing his own understanding of the subject and then conveying his own feelings to the pupil in an unconscious and natural way. However, in some of the institutions of higher learning, there appears to be an emphasis on the narration of facts, theories and empiricism which may help in the acquisition of some knowledge, but does not certainly help to develop wisdom.

In another context, Russell has observed, "One of the great things that education can and should give is the power of seeing the general in the particular, the power of feeling that this, although it is happening to me, is very like what happens to other, what has happened through many ages, and may continue to happen". In fact, to look at matters around with objectivity and with a sense of impersonal justice is possible only as a result of true education.

The modern education needs to be broad-based in order to widen the horizon and understanding of the pupil. For this purpose, the scientific education should be happily blended with the cultural education. The cultural knowledge represents tradition and the scientific knowledge represents

awareness of the natural phenomenon. There is no conflict between the two and the knowledge of both is necessary for a modern educated youngman. It is essential that every science student should have some knowledge of history, literature and arts and that every cultural student should have some acquaintance with the basic ideas of science. Some may say that there is no time, during the university curriculum, to achieve this. But in my view, it arises more because of our unwillingness to modify our university curriculum in terms of the changing requirements. The university education cannot be considered to be complete unless it is capable of producing educated youngmen with alround knowledge and a broad understanding of their environment and social phenomena. In this respect, there is a lacuna in our education system which calls for immediate attention.

In this gathering of scholars, it may be worthwhile to mention that what is important in education is not merely to acquire specialised knowledge of certain subjects but also to develop a wider outlook and depth of understanding. In achieving these objectives our teachers have a great responsibility to discharge. About their role, I can do no better than quote Bertrand Russell, 'They should exemplify the value of intellect and of the search for knowledge. They should make it clear that what at any time passes for knowledge may, in fact, be erroneous. They should inculcate an undogmatic temper, a temper of continual search and not of comfortable certainty. They should try to create an awareness of the world as a whole, and not only of what is near in space and time. Through the recognition of the likelihood of error, they should make clear the importance of tolerance. They should remind the students that those whom posterity honours have very often been unpopular in their own day and that, on this ground, social courage in a virtue of supreme importance. Above all, every educator who is engaged in an attempt to make the best of the students to whom he speaks must

regard himself as the servant of truth and not of this or that political or sectarian interest."

The purpose of education is on the one hand to develop the mind and on the other to train the citizen. The latter requires a profound sense of duty to be instilled among the students. They should be taught to feel that the mankind depends upon them, and that, "they own benevolent service especially to the less fortunate classes beneath them.... Their manners will be easy and pleasant and their sense of humour unfailing".

Education is a means to achieve human quest for the advancement of society. This raises the question about the individual and social aims of education. It must be remembered, however, that relationship between the individual and the society is really mutual and complementary. The development of the individual enriches and improves the society; and a well-organised, free and just society provides wider opportunities for the individual to grow. In certain situations, however, a greater emphasis has to be placed on the social purpose of education and education has to be used as an instrument of social change.

Dr. Zakir Husain observed that, "The tasks which we have set before ourselves are as formidable as they are noble. We want to raise our standard of living substantially and to assure a minimum income to each family or, at least, to each planned family. We want to create a new social order based on justice, equality, freedom and the dignity of the individual. We want to adopt modern science and technology and, side by side, develop a sense of social responsibility and generate moral and spiritual values based on our own great traditions and the valuable contributions of other cultures. This is not a utopian or even an over-ambitious programme. It is the minimum needed for an honourable national existence. In implementing it, we can have no greater ally than education which is the most powerful instrument of national development. What we need most urgently, therefore, is revolution

in education which can trigger off the cultural, economic and social revolution we need."

I would also like to emphasize that the universities in India should strengthen the intellectual basis of our unity. The aim of education is to liberate a man from the bonds of narrowness, to widen the horizon of his outlook and make him a useful citizen of his country. Higher education should develop a man's tolerance and catholicity of spirit and thus create a healthy climate of mutual understanding which alone can promote national prosperity. Education in citizenship should, thus, be one of the great tasks of Indian education. It is not enough knowing the Constitution or reading a few books on Civics or

Political Science. Education in citizenship is not so much education in rights as education in duties and responsibilities of citizenship. It should be the aim of all institutions of higher learning to turn out men and women who, as good and responsible citizens, can play their part in the development of the country. They should be ever ready to respond to the call of natural duty "where distress cries for succour, where narrow loyalties of caste or creed, language or region are to be sacrificed for the loyalties to the society and humanity".

[Excerpts from the convocation address delivered by Dr. A. R. Kidwai, Chairman, UPSC, at Nagpur University].

Prof. M. G. K. Menon addresses convocation at Calcutta

Prof M.G.K. Menon, Chairman of the Electronics Commission in his convocation address at the Calcutta University expressed the view that the role of universities in the country should be constructive and meaningful. He said education should be a process which enabled the human mind to think and to reason. He felt, with advances in science and technology, new horizons for education have opened up and we should learn to make full use of these aids for stepping up the pace of development.

Prof Menon stressed the need for establishing an indigenous science and technology community in tune with the environments and capable of playing its role fully. He said developing countries should take full advantage of the availability of the vast accumulation of science and technology in the world. He thought it was important that such technology should lead to meaningful, economic and social development appropriate to the environments in which it was being applied. He pointed out that technology with lower capital investment and higher employment potential was suitable for a country like India.

He said the universities today performed an omnibus function and its activity were confined to providing training in skills of a professional nature. As a result, the other functions of the university got neglected. He impressed on the new graduates to look deep into the problems and search for opportunities to stretch their creative abilities for the good of the society.

Shri T.N. Singh, Chancellor of the University and Governor of West Bengal, presiding over the convocation, said in view of the complex problems of the present day socio-economic structure, it was imperative to change the pattern of curricula in the university according to the needs of the society. He called for elimination of malpractices in the examination hall. He added that the university should inculcate such knowledge and skill among the students as would enable them to join the national endeavour to eradicate poverty, illiteracy and ignorance.

Dr S.K. Mukherjee, Vice-Chancellor of the university, advocated reform in the system of education. He said the present system of education was examination oriented. He thought the

reform should start in the classroom where lessons were imparted. He felt if the lessons were diligently imparted in the classroom before sending the students in the examination hall, much of the problems that arise in the conduct of examinations will disappear. He called for a ban on all tutorial colleges and similar institutions which, by promising the students easy success, lured them away from real studies.

Seminar on science education for women

Dr Madhuri Shah, Vice-Chancellor of SNDT Women's University, while inaugurating the seminar on Women and Science in India, jointly sponsored by the Research Unit on Women Studies of the university and the CSIR, stressed the need for inculcating a scientific attitude among women practising science.

The seminar was follow up to a study on working women science degree holders' initiated by the Indian Women Scientists' Association, the Research Unit of SNDT University and the CSIR. The seminar considered the main issue of the social output from investment on science education for women.

Dr Neera Desai, Hony Director of the Research Unit of the University placed three issues for debate—reasons for the low career status of women; the interaction between science and women and the role of science-qualified women in development.

Dr Rehana Ghadially, Professor of Psychology at the IIT, Bombay said at present the process of socialisation of girls over-emphasised their feminine role and under emphasised their role as workers. The Professor said this led to a self-imposed limit to one's growth in the interest of the family.

Among other participants included Dr A.R. Desai, Professor of Sociology, Dr Mani Kamerkar, Professor of History, SNDT, Dr Roshan Begum, Smt. Kamla Balaraman of the Indian Women Scientists' Association, Dr A. Rahman of the CSIR and Dr Veena Mazumdar, Chief Editor, ICSSR.

Bihar Seminar on Examination Reforms

The seminar held recently in Patna under the joint auspices of Bihar Inter University Board and Patna University has recommended introduction of continuous sessional evaluation as a supplement to university examination to serve as an aid to ascertain the progress of student and to find out the effectiveness of teaching. The seminar recognised that examinations have to continue in response to academic needs as well as social obligations. The participants however felt that the impact of examinations should be softened so that it does not become an end in itself but serves as an objective of education. The seminar recommended teaching, learning and evaluation should constitute a unity of functions and reforms be introduced with the

assignments and participation in tutorials and seminars. The participants were of the opinion that the system of sessional evaluation should be introduced at the post-graduate level and later extended to the undergraduate stage of education in the light of experience and achievements. The marks of sessional evaluation and final examination should be shown separately and the students should be required to pass separately. There should be a monitoring unit in the university in the form of an Examination Unit to keep a watch on the sessional evaluation done by these departments.

It was felt that motivating the students to take study seriously is a part of teachers' function. An appropriate mixture of reward and punishment should be worked out

Prof Thakur Prasad Singh, State Minister for Higher Education in his presidential remarks sought the cooperation of students and teachers in bringing the reforms in the examination system. He said that the Government alone could not maintain the sanctity of examinations. He called upon participants to suggest practical solutions for eradication of various ills of the examination system.

The seminar was attended by the Vice-Chancellors of all the State universities, educationists, expert from the Association of Indian Universities, Prof V. Natarajan and teachers and students representatives.

Coordination on agricultural research in UP Varsities

Uttar Pradesh Agriculture Minister, Shri Rajendra Singh told the meeting of Vice-Chancellors of State Agricultural Universities in Lucknow that the Government has decided to constitute a committee under his chairmanship to coordinate the agriculture research work in the three agricultural universities of Faizabad, Kanpur and Pantnagar. The guidelines of the coordinating committee will be prepared by an ad hoc body of one representative each from the three agricultural universities and the state departments of Agriculture and Animal Husbandry.

The Agriculture Minister said the coordination committee for agricultural research will consider the requirements of the state for conducting research work by experts at these agricultural universities for improving technology and developing new high yielding varieties.

The Minister pointed out inter-university coordination will avoid overlapping of research work by the universities. He added a breakthrough would be achieved speedily by earmarking the field of the research for each university.

The Agriculture Minister admitted that there was much scope for improving the productivity which in comparison to other states stood far below the all India average in both wheat and paddy. He said it could be

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object of assisting the teaching-learning process.

It was maintained that the objective of improving the question paper is to create a climate for bringing about modernisation of the syllabi and desirable changes in the methods of teaching. At the undergraduate stage the objective can be fulfilled through the development of question banks.

It would also be necessary to orient the teachers in techniques of writing questions and in the methods of sessional evaluation. The seminar recommended that sessional evaluation should be used as an instrument of efficient education and not merely as a tool of evaluation. The departments should chalk out their plans regarding the modes of internal assessment which should include project work, field work, home

so as to motivate the students to use the library facilities, to attend to lectures, tutorials and seminars in order to take the best from the teachers.

Earlier the Governor of Bihar and Chancellor of the State Universities, Shri Jagannath Kaushal while inaugurating the seminar said that the main responsibility of maintaining the sanctity of examinations rested with teachers. He added if the teachers commanded respect from students things would naturally improve in the campus. He pointed out that the teachers were given the work of nation building and if they fail in their duties the nation would greatly suffer.

The Governor asked the participants of the seminar to offer a simple solution to the problem which could be easily implemented.

attributed to lack of introduction of new varieties suitable to local conditions of various parts of the state. He added that the farmers would willingly follow the advice of agricultural experts if better varieties and improved technology which suited their requirements were made available to them. He commended the efforts made at these universities for maximising the agricultural production through organisational measures.

Proper forum for students grievances stressed

The Union Minister for Education, Social Welfare and Culture, Dr P.C. Chunder has appealed to political parties to help in maintaining the sanctity of the campuses. Dr Chunder has urged them not to exploit small issues relating to educational institutions for furthering political ends.

He said he has impressed upon the Vice-Chancellors all over the country to evolve a suitable machinery to redress the genuine grievances of the students concerning their day-to-day work in colleges and universities.

He reiterated that problems arising from certain lapses on the part of teachers, complaints about the conduct of examinations or demands for amenities should not invite agitations.

The Union Minister said he has requested the Vice Chancellors to ensure speedy and timely redress of the legitimate demands of the students.

The Minister added he had written to the Chief Ministers to set up machinery at the state, district and university levels to provide a proper forum for students to voice their demands of grievances. The academic and state government authorities concerned should also have regular consultations to maintain discipline in the campuses, he said.

Dr Chunder thought in a large measure student unrest was related to the socio-economic problems. He however urged that the universities should not be closed down simply because all these problems were not getting solved immediately. Some remedial measures would have to be taken to ensure that university's

activities were not affected by extraneous or non-academic factors.

He said although students and teachers could not be kept away from problems facing the society it was necessary to keep the academic atmosphere free from politics.

He suggested the improvements regarding simplifications of student union elections, participation of students in the management of educational institutions and a greater involvement of student community in the development work should be looked into by all those concerned.

Chamber of agriculture at PAU

Dr Amrik Singh Cheema, Vice-Chancellor, Punjab Agricultural University, told in Ferozpur that a chamber of agriculture is being set up in Ludhiana to safeguard the interests of farmers in pursuance of the resolution adopted by the Farmers' Council of the University.

He added the Prime Minister was being requested to meet the organisers of the chamber in the last week of August. The Vice-Chancellor told the chamber would take steps for the economic, social and cultural development of farmers and to encourage agriculture exports through farmers' organisations. A unit of this chamber has already been set up in Ferozpur.

Marketing training at farm varsities

Dr Michael Haines, FAO consultant visited the Punjab Agricultural University in connection with the FAO survey undertaken in co-operation with Asian Association of Agricultural Colleges and Universities. The survey relates to agricultural marketing training at agricultural colleges and universities in Asian countries. The objective is to improve agricultural marketing training material and training methods to achieve a systematic and practice-oriented training programme.

The FAO consultant will also visit the Institute of Business Management, Allahabad. This is the second institute in India which has been selected by the FAO for the survey.

New courses at Punjabi Varsity

The Academic Council of the Punjabi University at its recent meeting, presided by Dr Amrik Singh, cleared the proposal for starting evening law classes at Faridkot from the current academic session. The Council also approved the starting of M.Ed. (Evening) classes at the Government College of Education in Patiala. Full time librarians and library assistants have been included in the category of persons allowed to appear as private candidates in the university examinations as per the Council's recommendations. The other issues concerning reservation of seats for the physically handicapped students, award of scholarships to these students and institution of merit scholarships in each of the four branches of engineering, civil, electrical, mechanical and electronic were also considered by the Council.

New policy for farm varsities

Dr M.S. Swaminathan, Director-General of Indian Council of Agricultural Research told in New Delhi that a new policy for functioning of agricultural universities in the country has been evolved in light of the recommendations of the Randhawa Committee.

He said agricultural universities have been advised to give stress on the production of farm graduates who can take to farming as their profession after completing their education instead of looking for jobs of an academic nature. This will require better practical training to the students coming to these universities.

Dr Swaminathan added that the agricultural science students should have a knowledge of proper land water use in an integrated way. The Indian Council of Agricultural Research, he said, has emphasised to the agricultural universities to give a rural orientation to the curriculum of Home Science. He felt that the curriculum should include training in food processing, post-

harvest management, bio-gas management and rural energy use.

About the role of agricultural universities in the Sixth Plan, Dr Swaminathan told that the universities will be raising the production of potential of soil and water creating more jobs in rural sector and to help bridge the gap between potential and actual farm yields.

Education Ministers discuss national policy on education

The Conference of Education Ministers of States and Union Territories held recently in New Delhi agreed that the structure of school education should comprise elementary, secondary and higher secondary stages of twelve years duration. The higher secondary stage will cover two years while the undergraduate stage of higher education would be of three years duration. The consensus was that it should be left to the States to set apart 7 or 8 years for elementary education. The conference felt that the content of elementary education should be according to the local needs and each state must develop its own ethos.

The State Ministers discussed the issue of universalisation of elementary education and approved a framework of action, providing for, among other things, voluntary efforts in the massive expansion of elementary education, particularly in non-formal education.

The framework of action suggested by the conference includes the need for special efforts for enrolment and retention of girls, scheduled castes and scheduled tribes. Wherever necessary, special incentives, such as midday meals, uniforms, attendance scholarships, need to be provided for them.

The framework also laid emphasis on the improvement of the quality of teacher, besides tackling of problems faced by hilly states and desert areas.

The conference endorsed the Ishwarbhai Patel Committee's

He disclosed that the agricultural university at Faizabad has been advised to chalk out the teaching programme on the basis of Randhawa Committee report and start the undergraduate classes this year. The university was confining itself to research and extension education in collaboration with the agriculture and animal husbandry departments.

report on the ten year school curricula except the recommendations relating to the alternative courses in Mathematics and Science. The conference suggested this particular recommendation be studied further by the National Council of Educational Research and Training and its views should be made available to the State Governments and the Boards of Secondary Education.

The State Ministers favoured regional languages to be the medium of instruction up to graduate level.

The conference emphasised the role of rural sports and yoga for the development of rural children. It was recognised by the State Ministers of Education that both physical education and art should be an integral part of general education.

The conference discussed the National Adult Education Programme and resolved to give highest priority to the project to be implemented on the basis of action plan formulated by the working group. It was recommended that disbursement of funds to voluntary agencies be routed through the State Governments.

The programme plans to cover 65 million illiterate persons in the age group of 15-35 in the next five years. The Planning Commission has earmarked Rs 200 crores for the programme.

Mr P. Sabayanayam, Union Education Secretary said the Conference gave its approval to the broad outlines indicated in the draft of the national policy on

education. The States would give their detailed remarks as early as possible to enable the Centre to finalise the policy.

Summer institute in comparative literature

Dr V.C. Kulandaiswamy, Vice-Chancellor of Madurai University in his address to the valedictory session of the "Summer institute in comparative literature" made a fervent plea for comparative study of Tamil classics whose literary excellence has not been brought to the notice of the rest of the world. He said the summer institute has provided an opportunity for the Department of English to identify its literary interests not only with those of Tamil region in which the university is situated but also with those of the nation by extending the comparative angle of vision to include languages as Telugu, Malayalam and Hindi.

The summer institute was sponsored by the University Grants Commission and conducted by the Department of English, Madurai University for the first time in India to train teacher candidates registered for Ph.D. in comparative literature—a century old discipline with complex and highly evolved techniques of evaluation of two or more linguistically different literatures taken for comparison.

Dr T.P. Meenakshisundaram, former Vice-Chancellor of the University and 35 teachers from the State Universities representing the faculties of English, Tamil, Telugu and Hindi participated in the institute.

National policy on sports

The State Minister for Education and Social Welfare, Mr Dhanna Singh Gulshan, in his inaugural remarks at the meeting of the All-India Council of Sports in New Delhi, said the Government was committed to laying down a well-defined national sports policy. He added that after the views of the All-India Council of Sports were made available on the subject, the State Sports Council and Sports Ministers would be consulted for finalising the policy.

The Minister observed that policy on sports could be successful only if the State Governments and National Sports Federations extended their cooperation. He appealed to the sports bodies to rise above factionalism for the greater glory of Indian sports. The Minister noted that national resources for sports did not figure prominently in the order of national priority. He however urged the Council to ensure utilisation of available resources to the optimum. He suggested that right talent should be spotted out at the right age and encouraged and developed through proper coaching, nutritious diet and regular practice.

Field Marshal S. H. F. J. Manekshaw, in his opening remarks said the Council would tender absolutely impartial advice to the Government on matters relating to sports.

He thought there was no reason why India could not produce excellent sportsmen with its population of 600 million. He appealed to the members to rise above all considerations of regionalism and express their views as Indians.

Energy research at IITs

The Union Education Minister, Dr P.C. Chunder, said in New Delhi that the plans were under consideration to introduce a course on energy studies and energy technology including solar energy at M. Tech level in the IITs at Madras, Kharagpur and Delhi. He added there was no proposal under consideration to introduce separate courses in solar energy in any university in the country and other alternate sources of energy were studied as part of the existing courses in some of the universities. The Minister informed that the Indian Institute of Technology, Madras, offers Ph.D. level programmes in Solar Energy.

Rhodes scholarships

The Rhodes scholarships have this year been awarded to two students, Miss Anita Mehta and Mr Nikhilesh Senapati for study of Physics and Geology at the Oxford University.

The Rhodes scholarships were

first offered to India in 1946, and the first two Rhodes Scholars joined two of the most famous Oxford colleges—Magdalen and Christ Church—in October 1947.

First-class graduates between the ages of 19 and 25 are eligible to compete for the scholarships. Apart from high academic ability, candidates must show evidence of enthusiasm in extra-curricular activities, particularly sports.

NSS camp in Madras

The Madras University sponsored camp on 'Youth and Rural Reconstruction' was organised at Subramaniampalayam village for ten days. Fifty volunteers who participated in the camp were involved in construction of school lunch kitchen—the entire cost of which was met by the community itself with contribution in cash, material and labour. Apart from the civil work, fifty saplings were planted to utilise waste kitchen water. An immunisation campaign for children was carried out by Dr Varadarajan and his team.

Other activities like nutrition education, adult education, soil testing, tree plantation and strengthening of youth clubs were also undertaken.

Mr T.S. Avinashilingam Chettiar presided over the valedictory function. Dr Nirmala K. Moorthy, Professor in the Home Science College welcomed the gathering. The report on the camp was presented through a cultural programme presented by the volunteers of the Camp, youth club members, college students and school children.

Madurai organises eighth conference of Dravidian Linguists

The Eighth All-India Conference of Dravidian Linguists was held in Madurai University under the joint auspices of the Department of Tamil Studies and the Dravidian Linguistic Association.

Mr C. Aranganayagam, State Minister for Education and Pro-Chancellor of the University in his inaugural address made an appeal to the Dravidian Linguists to prepare historical dictionaries and teaching material for the

Dravidian languages. He emphasised the necessity for undertaking rigorous survey work in the field of dialectology and sociolinguistics.

Dr V.C. Kulandaiswamy, Vice-Chancellor of the university in his presidential address underlined the importance of evolving a scientific Tamil so that scientific and technological achievements could be made possible. Prof V.K.R.V. Rao in his key note address suggested that a common script be evolved for all the Indian languages so that different Indian communities can easily learn other languages. He also made a suggestion that Devanagari script may be accepted as one of the common scripts if there was a necessity of two scripts.

Twenty one sessions were held under ten different subjects like descriptive linguistics, place name studies, metrics and computer analysis, translation, stylistics, sociolinguistics, historical linguistics etc. There were papers dealing with the structure of languages like Tamil, Malayalam, Telugu, and other Dravidian languages—Kannada, Tulu, Muduga and Betta Kuruba. The problems faced during the teaching of non-native languages were dealt in detail under the contrastive linguistics sessions. The structure of Tamil was well analysed with those of Telugu, Punjabi, Hindi, Malayalam, Marathi and Saurashtra. The translation problems of journalistic Tamil was also analysed. The role of language in the society was discussed in the sociolinguistics session.

There was a symposium on "coining of technical terminology". Delegates from different language groups presented the problems for coining of technical terminology and suggested their views.

The valedictory address was delivered by Prof S. Krishnaswamy, Nehru Fellow at the Madurai University. About 150 scholars from the various faculties of Indian universities attended the conference.

Asian Education Ministers meet in Colombo

The fourth regional conference of Education Ministers of Asia

was inaugurated in Colombo by the President of Sri Lanka, Mr J.R. Jayawardene.

India is being represented on the conference by the Union Minister of State for Education, Social Welfare and Culture, Mrs. Renuka Devi Barkataki.

The conference is being attended by Ministers of Education of regional UNESCO countries as well as observers from several non-member states and representatives of various Inter-governmental and non-governmental organisations. Sixtyfive per cent population of the world is being covered by the countries being represented at the meeting.

The conference will discuss, among other things, recent developments and emerging educational policy trends in the region, equal access of education, efficiency in education, interlinking of education and productive work, reform and renewal of education closely linked to economic, social and cultural developments and forms of international and regional cooperation.

Sri Lanka's Prime Minister, Mr Premadasa told the inaugural session that the education being provided to the children was not only too little but for the most part irrelevant and not linked to their needs and aspirations.

The Director General of UNESCO, Mr Amadou-Mahtar M'Bow said that in this vast densely populated region of the world the problems involved in educational development have become so great in scale which sometimes appear disheartening. He added that education will be able to release the creative energy of hundreds of millions of men—this is ultimately what is at stake in this conference.

Paramedical course proposed at Calcutta

The West Bengal Health Minister, Mr Nani Bhattacharyya, told in Calcutta that the Government proposed to introduce a three year paramedical education course in the State from the next academic session. The students who pass the 10-year secondary

examination will be eligible for admission to the course. He added that, to start with, four institutions would be established—two in North Bengal, one each in Murshidabad and Midnapore. The Minister reiterated the need for expansion in the rural medical care in the State. To achieve this, he thought there should be a condensed course aimed at providing young people the basic knowledge in sanitation, hygiene and treatment of common ailments. At the early age of twenty, a student would complete the course and after six months of hospital training would be ready to start work.

The Minister added that funds would not be a problem as the budget provision has already been made.

Punjabi Varsity departments to be democratised

The Syndicate of the Punjabi University at its recent meeting in Patiala approved a proposal to democratise the university teaching departments by involving all the teachers in the working of the departments. The departments as per the proposal will have an Administration Committee whose constitution will vary according to the size and nature of the department. All faculty members will constitute such committee where the strength of the faculty members does not exceed 10 to 12. The departments will meet the Vice-Chancellor shortly to evolve a formula.

The Head of Departments will now be appointed by the Syndicate on the recommendations of the Vice-Chancellor.

UGC invites research proposals

The University Grants Commission has invited proposals from university and college teachers for taking up minor research projects in science subjects.

The details of the scheme and the proforma have been forwarded to all the universities. The teachers who desire to submit

proposals may contact the Registrar of the University or Principal of the College or direct the UGC.

The UGC will entertain such proposals upto 31st August, 1978.

PERSONAL

1. Dr Amrik Singh, Vice Chancellor, Punjabi University, will also be the Chairman of the Society for National Institutes of Physical Education and Sports (SNIPES).

2. Dr A. K. Dhan has been appointed Vice-Chancellor of the North-Eastern Hill University.

3. Mr S. K. Chaturvedi, has taken over as Vice-Chancellor of Bihar University with effect from July 22, 1978.

4. Shri Bishan Singh Samundri, Vice-Chancellor, Guru Nanak Dev University, has been elected Chairman of the Education Sub-Commission of the Indian National Commission for Co-operation with UNESCO for one year.

5. Professor G. S. Marwaha, Director, Indian School of Mines, has been appointed Member of R&D Board of Coal India Limited.

6. Dr H.R. Arakeri, Vice-Chancellor, University of Agricultural Sciences, Bangalore, attended the World Conference on Innovative Higher Education at the University of Wisconsin, USA.

7. Professor Sant Singh Sekhon, a renowned educationist, has joined as Professor Emeritus in the Directorate of Extension Education of Punjab Agricultural University.

8. Dr Harnam Singh Shan, Professor and Chairman, Department of Guru Nanak Sikh Studies, Panjab University, has been honoured by the Punjab Government in recognition of his researches and in appreciation of his latest research work "Guru Nanak's Masterpiece: Japji".

Research in oceanography

The Board of the Ocean Science and Technology Agency with the Prime Minister, Mr Morarji Desai in the Chair, at its recent meeting held in New Delhi decided to acquire a oceanographic research vessel fitted with modern equipment for interdisciplinary research about the non-living resources in the sea, the ocean floor and in the ocean crust.

The vessel will cost Rs 20 crore and will be bought with assistance from the Federal Republic of Germany. It was also agreed in principle to purchase another vessel for research on fisheries and other living resources.

It was pointed out that the seas touching India are rich, both in living and non-living resources. But not much has been done so far towards exploiting these resources. The matter assumed urgency with the declaration by India in 1975 of an exclusive economic zone of 200 miles from the coastline.

The Ocean Science and Technology Board was set up with representatives of concerned ministries and offices of the Government of India to co-ordinate and plan work on ocean sciences. A committee of experts was set up by the Planning Commission to prepare a five year plan of action and to examine all proposals for research. The report of this committee was also approved by the Board.

Principals discuss examination reforms

Prof. R.M. Sharma, presiding over a meeting of the principals of colleges affiliated to the Himachal Pradesh University in Simla, emphasised the need for reforms in the mode of examinations and the syllabi with a view to achieving improvement in quality of education.

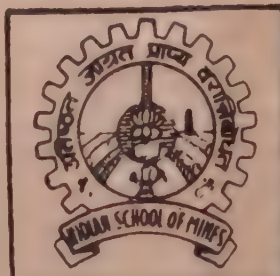
The principals who discussed various problems relating to the conduct of examinations, evaluation and vacation schedule, recommended that annual examination should be held during the first week of April. They felt the

practicals in respect of music in all the classes and science practicals for at least pre-medical and pre-engineering classes should be held before theory examinations. It was recommended that these examinations might be conducted by the teachers of respective colleges.

The principals reiterated an upward revision of remunerations

payable to teachers for conduct of examinations. They were of the opinion that if full rates were paid, the examinations could also be conducted during vacations.

Earlier the Registrar of the Himachal Pradesh University, apprised the principals about the problems being faced by the university in conduct of examinations.



Indian school of Mines

Dhanbad-826004

Advt No. 420012/78

July 20, 1978

I. The Indian School of Mines—a 'deemed University' under the University Grants Commission Act, 1956, invites applications for the following faculty positions:

1. **7 Professors** (Pay-scale Rs. 1500-2500; Upper age limit 50 years);
(a) one for IEL Chair in Tunnelling and Shaft Sinking for the Department of Mining Engg; (b) one in Mech Engg; (c) one in Mining Machinery; (d) one in Elec Engg—all three for the Dept of Engg and Mining Machinery, (e) one in Electronics and (f) one in Instrumentation—both for the Dept of Electronics and Instrumentation; (g) one for NMDC Chair in Management for the Department of Industrial Engg & Management (Post at 1 (d) temporary but likely to become permanent)
2. **2 Lecturers** (Pay-scale Rs 700-1600; Upper age limit 35 years);
(a) one in Physics for the Dept of Physics & Maths; (b) one Electronic Engineer/Lecturer for the Dept of Electronics and Instrumentation.

II. Specialising in the field of earth sciences and technology, Indian School of Mines conducts three B Tech programmes (in Mining Engg, Mining Machinery, and Petroleum Engg), two M Sc programmes (in Applied Geology and Applied Geophysics) as well as several industry-oriented post-graduate programmes, including M Tech programmes in Mining and Mine Planning/Open Cast Mining/Mining Machinery/Mineral Exploration/Engg Geology/Mining Geophysics/Drilling Engg/Mineral Engg/Fuel Engg/Industrial Engg & Management. Two additional M Tech programmes (in Pet Engg and Pet (Production) are expected to be started next year. The school also has an ambitious continuing-education executive-development programme (covering about 30 courses per year), a strong R & D activity and an approved scheme of institutional consultancy.

III. Detailed information for candidates and prescribed application forms are obtainable from the Registrar, Indian School of Mines, Dhanbad-826004, on sending a self-addressed envelope of the size of 29 cm x 12 cm affixed with postal stamp of the value of Rs 2.95 paise. Application in the prescribed application form, complete in all respects should reach the undersigned on or before **August 28, 1978**. Those in service are advised to apply through their employer (s).

S. P. VARMA
REGISTRAR

A list of Doctoral Theses Accepted by Indian Universities

SOCIAL SCIENCES

Psychology

1. Nalini Devi, G. Development of number concept in young children. Sri Venkateswara University.
2. Rauta, Kali Charan. Consciousness and mental entities. I.I.T., Kanpur.
3. Tambar, Abhimanyu. A study of some psychological dimensions of political efficacy and cynicism. University of Udaipur.

Sociology

1. Baghel, Kiran. Rewa zile mein apradh pratiman. (Hindi). Awadhesh Pratap Singh University.
2. Barthakur, Jitendra Kumar. The demography and socio-economic process in Arunachal Pradesh. Gauhati University.
3. Cherian, K. Management processes in voluntary social welfare organisations. T.I.S.S., Bombay.
4. Ghode, Ramesh Nanaji. A sociological study of a tribal community in an industrial—urban setting: The Mang-Garodis in the Kanhan industrial township. Nagpur University.
5. Gokarn, N. Welfare planning in a state in India. T.I.S.S., Bombay.
6. Mehta, J.D. Beyond the household walls: A study of women executives at work and at home. T.I.S.S., Bombay.
7. Murdia, Ratna. Task structures and management processes in human services organisations. T.I.S.S., Bombay.
8. Sharma, Chuni Lal. Urban power structure and decision making: A comparative study of community power structure in Rajasthan. University of Udaipur.
9. Sivaraman, M. Impact of multi unionism on industrial relations in Kerala. University of Kerala.
10. Trivedi, Ramesh Chandra. Changing family structure of ex-feudals of Rajasthan (Mewar). University of Udaipur.
11. Vyas, Narendra Nath. Social and economic dimensions of indebtedness and exploitation among the tribals and non tribals of Southern Rajasthan: A sociological perspective. University of Udaipur.

Anthropology

1. Kamkhenthang, H. Household Council or Inndongta among the Paite of Lungehin, Manipur South District. Gauhati University.

Political Science

1. Koul, Santosh Kumari. Evolution of the constitutional relationship between the Jammu and Kashmir State and the Indian Union, 1947-1975. University of Jammu.
2. Rastogi, Satish Kumar. The role of Indian National Congress in Indian Politics, 1966-71. Meerut University.
3. Saied Ahmed, Syed Abu Nasar. Urban politics in Gauhati, 1947-72. Gauhati University.
4. Saraswat, Sohan Lal. The President's rule in the states in India with particular reference to U.P. and Rajasthan, 1965-71: A critical assessment. Kanpur University.
5. Verma, Ram Bahadur. Acharya Narendra Dev ke rajnaitik vichar (Hindi). Kanpur University.

Economics

1. Madnani, Gian Madan K. Economic analysis of egg production in Udaipur and Ajmer cities of Rajasthan. University of Udaipur.
2. Mathur, Rajeshwari. Public expenditure in Rajasthan, 1951-52 to 1970-71. University of Udaipur.
3. Projapati, Sudhan Lal. Land revenue administration in Assam, 1826-1874. Gauhati University.
4. Srivastava, Surender Kumar. Wage productivity relationship in engineering industry of Kanpur Region. Kanpur University.
5. Tewari, Bhagwati Prasad. Role of Indo-German agricultural development project in Almora District. Kumaun University.
6. Venkataraman, K. Transfer of technology through

foreign investment and collaboration. Jawaharlal Nehru University.

Education

1. Ganga Saran. Attributes of under-achieving undergraduate students: An investigation into the personality and environmental pattern of characteristics of male and female underachieving students studying in rural and urban colleges affiliated to Meerut University. Meerut University.
2. Sharma, Bharat Bhushan. Experimental verification of various methods of examination in history at the lower and high stages. University of Jammu.
3. Sharma, Bhism Dutt. Shankera Charya ka shiksha darshan (Hindi). Meerut University.
4. Verma, Gajey Singh. An experimental study of interaction effects of styles of programming, response mode and taxonomic categories in geography. Meerut University.

Commerce

1. Bhattacharyya, Pranab Kumar. Socio-economic impact of intensification of agriculture in Cachar. Gauhati University.
2. Jain, Sujana Mall. Working of joint stock companies of Rajasthan. University of Udaipur.
3. Ray, Ajit Kumar. The historical evolution of corporation tax in India. University of Calcutta.

Home Science

1. Geervani, P. Nutritional evaluation of selected varieties of legumes processed by traditional methods. University of Madras.
2. Indulekha, K.V. Effect of age, environment and sex of infants on their visual and attachment behaviour, behavioural profile and mothers' behaviour patterns. University of Madras.
3. Jaya, N. A study on mental abilities of selected mal-nourished pre-school children in Coimbatore City. University of Madras.
4. Satyavathi, K. Physical growth characteristics of adolescents of Chittoor District, Andhra Pradesh. Sri Venkateswara University.

HUMANITIES

Philosophy

1. Kalpana Singh. Kalingwood ka samaj darshan: Ek vivechanatmak adhyayan (Hindi). University of Indore.
2. Masani, Behram. Some philosophical problems arising out of modern psychological researches. University of Indore.
3. Sharma, Kameshwar. The philosophy of karmayoga according to the Bhagavadgita and Swami Vivekananda: A comparative and critical study. Bhagalpur University.
4. Sundararamaiah, Guda. Nature and destiny of soul in Indian Philosophy. Andhra University.

Language & Literature

English

1. Budhrani, Ail Matumal. The life of the mind in the novels of Virginia Woolf. Nagpur University.
2. Inamdar, Fakhrubeg Adambeg. Image and symbol in Joseph Conrad's novels. Marathwada University.
3. Shirwadkar, Meena Keshav. The image of woman in Indo-Anglian fiction. Marathwada University.
4. Srinivasulu, J. Archibald Macleish as a playwright. Meerut University.
5. Srivastava, Mohan Lal. Kamla Markandaya: A critical study. Awadhesh Pratap Singh University.

Sanskrit

1. Dwivedi, Ayudhya Prasad. Kalidas ka bimb vidhan. Awadhesh Pratap Singh University.
2. Kamal, Hari Sobhagyam: Vivechanatmak adhyayan. Kanpur University.
3. Pandey, Kaushal Parsad. Vyakaran shastra mein Kound Bhatt ka yogdan. Awadhesh Pratap Singh University.
4. Sharma, Manju Lata. Vedant parampara mein

sharirik anu bhashyon ka Brahm tatwa parak tulnatmak adhyayan. Kanpur University.

5. Shashi Prabha. A study of Raghava-Pandaviyam. University of Delhi.

Punjabi

1. Gurcharan Singh. Nanak Bani: The thematic pattern. University of Delhi.

2. Kapur, Narinder Singh. The development of Punjabi journalism. Punjabi University.

3. Saini, Pritam Chand. Kavi Kishan Singh Arif: Ek alochnatmak adhyayan. Punjabi University.

4. Sidhu, Parmjit Singh. The semiological structure of Akal Ustat. Punjabi University.

Hindi

1. Agarwal, Kamlesh. Nayee kavita mein bimb evam pratik. Meerut University.

2. Awasthi, Prakash Narayan. Shri Vrindavan Lal Verma tatha Sir Walter Scott ke katha sahitya ka tulnatmak adhyayan. Kanpur University.

3. Chandralekha Devi, C. Indian culture and civilization depicted in Hindi historical dramas. University of Kerala.

4. Kapoor, Madhuri. Bharatiya achara santitaon ke sandarbh mein Tulsi ke achara siddhant. University of Calcutta.

5. Mathur, Usha. Madhyakaleen Ram Bhakti kavya mein Shringar—Varnan. University of Delhi.

6. Pant, Mukul. Illa Chandra Joshi ke katha sahitya ka samikshatmak adhyayan. Kumaun University.

7. Pant, Pooran Chandra. Kumauni lokgeeton ka sahityik evam sanskritik adhyayan. Kumaun University.

8. Sharma, Pyare Lal. Bharatiya nav jagaran ke prisht-bhoomi mein 20vin shatabdi ke Hindi kavya ka anusheelan. University of Saugar.

9. Srivastava, Lakshmi Pd. 'Deen'. Swatantrayottar Hindi sahitya ko Hindi sangathno ka yogdan. Bhagalpur University.

10. Sudha Rani. Vakrokti sidhant ke pariorakshya mein Ramcharitmanas ka anusheelan. Meerut University.

11. Verma, Heeralal Kedarnath. Freudvad ke paripreksh mein Hindi ke dempatya mulak upanyason ke vivechana. Nagpur University.

12. Yadav, Vikrama Jeet. Nirala ke kavya-bhasa. Meerut University.

Bengali

1. Basu, Santi. Dharmachintoy-0-Jatiya charitra gathane

sahityer probhab. University of Calcutta.

2. Mallik, Raghunath. Kalidas paratibha. University of Calcutta.

3. Niyogi, Pratibha. Rabindra sahitya baishnal manasi-katar swarup bichar. University of Calcutta.

Marathi

1. Asolkar, Ambadas Rangnath. Astiv vad ani tyacha 1940 te 1970 ya kalateel Marathi kavita, katha, kadambri ani sameeksha yavreel prabhav. Nagpur University.

2. Dabir, Vijaya Suresh. Navi aithihasik kadambari. Nagpur University.

Arabic

1. Asad, Md. Samiullah. Al-Hisn al Matin fi Ahwal al-Wuzara wa al-Salatin: Critical edition with introduction and notes. University of Calcutta.

2. Husaini, Syeda Bilqis Fatema. A critical study of Indo-Persian literature during the Sayyid and Lodi periods 1414-1526 A.D. University of Delhi.

Malayalam

1. Jagadamma, N. A morphological study of Ezhuthachan's Bharatam. University of Kerala.

History

1. Bhatnagar, Rajendra Prakash. Growth and development of Indian medicine, ayurved. 1300-1850 A.D. University of Udaipur.

2. Biswas, Sachindrasekhar. Early terracottas of Bengal from earliest times to C. 600 A.D. University of Calcutta.

3. Kate, Pandit Venkatrao. Impact of the Nizam's regime on Marathwada, 1724-1948. Marathwada University.

4. Ojha, Jannesh Kumar. History of Mewar: Maharana Jagat Singh II to Maharana Hammir Singh II, 1734 A.D.—1778 A.D. University of Udaipur.

5. Mathur, Girish Nath. The Maratha incursions in Rajasthan, 1782-1818 A.D. University of Udaipur.

6. Nagori, Shanti Lal. History of Alwar State, 1775-1857 A.D. University of Udaipur.

7. Ramakrishnamacharyulu, V. Social reform movements in Andhra, 1848-1919. Jawaharlal Nehru University.

8. Ray Chaudhuri, Chittaranjan. Art of coinage in Ancient India. University of Calcutta.

9. Saha, Sudhir Chandra. Midnapore in freedom movement, 1885-1935. University of Calcutta.

10. Saxena, Avadh Narain. Life and times of Raja Rai Singh of Bikaner. University of Udaipur.

Indian University: A tragedy of small mind

(Continued from page 1072)

of the colleges and the universities in the country are sub-standard, there are ample reasons for that conclusion. This unenviable phenomenon prevails not because of the poor buildings or poor budgets, small libraries and ill-equipped laboratories, but essentially because of the conglomeration of small minds in our universities and colleges.

The danger to the universities is not only from within. The subtle attacks on their autonomy and the unending efforts to subordinate them by those who think that the universities subsist on their doles are no less pernicious. It is again the story of small minds sitting in big secretariats. It is a pity to see people thinking in terms of obliging the universities while paying them essential maintenance and development grants. The truth is just the opposite. There has to be a radical and drastic change in the attitudes of those who think in terms of the strangleholds on the universities. If such attitudes persist then whatever endeavours are afoot to bring about a change for the better, would melt into the thin air. □

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Address Enquiries to

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A list of select articles culled from periodicals received in AIU Library during July 1978

EDUCATIONAL PHILOSOPHY

- Burgess, Tyrrell. "Excellence or equality: A dilemma in higher education?". *Higher Education Review* 10(2); Spring 78: 41-54.
- Datta, Amlan. "Education and Society". *New Quest* (8); Mar-Apr 78: 99-104.
- Ghazzali, A. "Educational dimension of existentialism: From existence to choice". *Educational Studies* 4(1); Mar 78: 23-8.
- Tobert, William R. "Educating toward shared purpose, self-direction and quality work: The theory and practicing of liberating structure". *Journal of Higher Education* (Ohio) 49 (2); Mar-Apr 78: 109-35.

EDUCATIONAL PSYCHOLOGY

- Andrews, John D.W. "Growth of a teacher". *Journal of Higher Education* (Ohio) 49(2); Mar-Apr 78: 136-50.
- Chem, Michael and Fresko, Barbara. "Interaction of school environment and student traits". *Educational Research* 20(2); Feb 78: 114-21.
- Dahlgren, Lars Owe and Marton, Ference. "Students' conceptions of subject matter: An aspect of teaching and learning in higher education". *Studies in Higher Education* 3(1); Mar 78: 25-35.
- Horn, Jack. "Element of success: Competitiveness isn't that important". *Psychology Today* 11(11); Apr 78: 19-20.
- Kyriacou, Chris and Sutcliffe, John. "Model of teacher stress". *Educational Studies* 4(1); March 78: 1-6.

EDUCATIONAL SOCIOLOGY

- Baumrind, Diana. "Parental disciplinary patterns and social competence of children". *Youth and Society* 9(3); Mar 78: 239-76.
- Beattie, Nicholas. "Formalized parent participation in education: A comparative perspective—France, German Federal Republic, England and Wales". *Comparative Education* 14(1); Mar 78: 41-8.
- Dahrendorf, Ralf. "Rise of educational class". *Times Higher Education Supplement* (348); 14 July 78: 26.
- Murphy, James. "Education and equality: The professional ideology of the educational pathologist". *Educational Studies* 4(1); Mar 78: 53-65.
- Plastrik, Stanley. "Intellectuals and government". *India International Centre Quarterly* 5(2); Apr 78: 61-70.
- "ROLE OF universities in national development: NUFFIC Seminar, 1977". *Higher Education and Research in Netherlands Bulletin* 22(1-2) Winter-Spring 78: 3-86.

EDUCATIONAL PLANNING

- Boyle, J.D. "Conservative innovation". *Studies in Higher Education* 3(1); Mar 78: 63-71.
- Keppel, Francis. "Educational policy in the next decade". *New Quest* (8); Mar-Apr 78: 105-16.
- Nimmo, D.B. "Is there enough education in educational planning?". *Higher Education Review* 10(2); Spring 78: 61-71.

EDUCATIONAL ADMINISTRATION

- Centra, John A. "Types of faculty development programmes". *Journal of Higher Education* (Ohio) 49 (2); Mar-Apr 78: 151-62.
- Pratt, John. "Dispersed institution of higher education". *Higher Education Review* 10(2); Spring 78: 3-5.
- Soljan, Niksa Nikola. "Concept of self-management and the socio-economic background of decision-making in edu-

cation: The Yugoslav model". *Comparative Education* 14(1); Mar 78: 65-9.

- "SUPREME COURT judgement in the case of Shital Prasad Tyagi Vs Principal, Central Institute of Education and others, on conditions of service of Teachers in government colleges". *University Affairs* (Delhi) 5; May-June 78: 5-12.

CURRICULUM

- Arakeri, H.R. "Role of universities in population education". *University News* 16(13); 1 July 78: 1017-8.
- Balakrishnan, V.K. "Cooperation as a curriculum". *Yojana* 22(12); 1 July 78: 33.
- Ree, Jonathan. "Philosophy as an academic discipline: The changing place of Philosophy in an arts education". *Studies in Higher Education* 3(1); Mar 78: 5-23.
- Shirk, Susan L. "Work experience in Chinese education". *Comparative Education* 14(1); Mar 78: 5-18.

TEACHING

- Fineman, Stephen and Hamblin, Anthony C. "Teaching organisational behaviour through discussion groups". *Studies in Higher Education* 3(1); Mar 78: 45-62.
- Hargie, Owen D.W. "Importance of teacher questions in the classroom". *Educational Research* 20(2); Feb 78: 99-102.

EVALUATION

- Joshi, Nayin Chandra. "Examination that failed". *Yojana* 22(12); 1 July 78: 14-16.
- Peston, Maurice. "Some thoughts on evaluating interdisciplinary research". *Higher Education Review* 10(2); Spring 78: 55-60.

ECONOMICS OF EDUCATION

- Bourliaud, G. and Coulais, J.M. "Comparison of costs between a multi-site and a single campus university". *Higher Education Review* 10(2); Spring 78: 7-16.
- Disselhoff, Wolfgang. "Time-study budget for multi-site conditions". *Higher Education Review* 10(2); Spring 78: 32-40.
- Vredeveld, George M. "Distributional impacts of alternative methods of financing higher education". *Journal of Higher Education* (Ohio) 49 (1); Jan-Feb 78: 47-69.

PROFESSIONAL EDUCATION

- Ramaswamy, N.S. "Management education and training". *Yojana* 22(12); 1 July 78: 22-9.
- REPORT OF the review committee on agricultural universities". *Universities News* 16(13); 1 July 78: 1020-3.

ADULT EDUCATION

- Naik, J.P. "Adult education". *Yojana* 22(12); 1 July 78: 29-30.

COMPARATIVE EDUCATION AND COUNTRY STUDIES

- Cookson, Clive. "National institute proposed". *Times Higher Education Supplement* (346); 30 June 78: 5.
- Lakdawala, D.T. "New horizons in educational planning". *Yojana* 22(12); 1 July 78: 7-10.
- Ray, Douglas W. "Cultural pluralism and the reorientation of educational policy in Canada". *Comparative Education* 14(1); Mar 78: 19.
- Yadava, Gorelal. "Higher education in Bihar". *University News* 16(13); 1 July 78: 1019, 1038.

PANJAB UNIVERSITY CHANDIGARH

Advertisement No. 17/78

Applications are invited for the following posts in the Department of Pharmaceutical Sciences, so as to reach the Registrar, Panjab University, Chandigarh, along with postal orders for Rs. 10-by 12-8-1978. Fourteen days extra time is permissible to the persons who have to submit their applications from abroad.

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2. A doctorate degree in Pharmacognosy.

3. About ten years' experience of teaching the subject to post-graduate classes at University level.

4. Experience of guiding doctorate research.

2. Readers-2 (Rs. 1200-50-1300-60-1900) (Pharmaceutical Chemistry-1, Pharmaceutics-1)

QUALIFICATIONS

(i) A first or high second class M. Pharm. degree of an Indian University or an equivalent qualification of a foreign University.

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Preference will be given to SC/ST candidates if found suitable.

Besides pay posts carry allowances according to Institute Rules which at present correspond to those admissible to Central Government employees stationed at Kanpur. Candidates called for interview will be paid second class Railway fare from the place of duty to Kanpur and back by the shortest route. All applicants from Govt./Quasi-Govt. organizations, public undertakings should forward their applications through proper channel.

Applications for Technical Assistant should be made on the prescribed forms, obtainable free of charge from the Registrar of the Institute by sending a self-addressed unstamped envelope of 25 cm x 10 cm size accompanied by an Indian Postal Order of Rs. 7.50 (Rs. 1.87 for Scheduled Castes/Scheduled Tribes candidates) and for the post of Upper Division Clerk (Stores) should be made on plain paper, stating qualifications, experience, pay and present scale of the post now held and other particulars and accompanied by an Indian Postal Order for Rs. 3/- (.75 Paise for SC/ST candidates) in the name of Registrar, Indian Institute of Technology, Kanpur should reach the Registrar, Indian Institute of Technology, Kanpur-208016 on or before August 19, 1978.

BHOPAL UNIVERSITY BHOPAL

Advertisement No. 1/78

Applications on the prescribed form (obtainable free by sending a self addressed envelope of 24 x 12 cms. size bearing stamps worth 35 paise) are invited for the following posts of Deputy Registrar in the scale of Rs 700-50-1250 (N.P.) with benefits of C.P.F. and other allowances as admissible under the University Rules:

(1) Dy. Registrar, University—Permanent post—one

(2) Dy. Registrar, Correspondence Courses.—Temporary post—one
QUALIFICATIONS AND EXPERIENCE

Second class Post-graduate Degree in Arts, Science or Commerce with atleast 10 years administrative experience in a position involving supervision and control or 10 years teaching experience in a College or University. Familiarity with the procedure and working of University or the administration in a College or in an Institute of higher learning and research will be preferable. Working knowledge of Hindi is essential. Candidates possessing knowledge of examination work in a University will be preferable.

In case of the Deputy Registrar, Correspondence Course, persons with knowledge and experience of working in Accounts, Establishment and Academic Sections will be preferred.
AGE

Upper age limit 55 years on 1.7.1978.

Qualifications and age may be relaxed by the Executive Council on the recommendation of the Selection Committee in cases of Scheduled Castes/Scheduled Tribes candidates or those who are otherwise found suitable.

Higher starting salary may be considered in the case of an exceptionally qualified and experienced candidate.

Scheduled Castes/Scheduled Tribes candidates will be preferred.

Persons already in service must apply through proper channel. They may send an advance copy of their application within the due date and should bring a "No Objection Certificate" from their employer, when called for interview.

Candidates shall have to appear for an interview, at their own cost and produce their original degrees, certificates etc. at that time.

Applications accompanied with a Crossed Indian Postal Order for Rs 7.00 in favour of the Registrar, Bhopal University, Bhopal should reach the undersigned by name on or before 21.8.78.

The University reserves the right to negotiate with suitable person or person, if necessary.

M. G. Paithankar
REGISTRAR

UNIVERSITY OF KERALA

No : Ad. AII. 2.88/78
Notification

Applications are invited from qualified candidates for appointment to the following posts in the University Department of Journalism, Kariavatom, Trivandrum.

Name of Posts	Number of Post
1. PROFESSOR	1
2. READER	1
3. *LECTURER	1

(*Reserved for Scheduled Castes/Scheduled Tribe/O.B.C. candidates. In case there are no qualified candidates belonging to these communities the post will be treated as open.)

Scale of Pay

PROFESSOR	— Rs. 1200-1750
READER	— Rs. 850-1450
LECTURER	— Rs. 600-1250

Appointments will be made in accordance with Section 6, Sub Section (ii) of Chapter II of the Kerala University Act of 1974.

The details of qualifications, age etc. and application forms can be had from the Deputy Registrar (Administration), University of Kerala, Trivandrum on production of a receipt for Rs. 2/- (Rupees Two only) from the State Bank of Travancore or Crossed Postal Order drawn in favour of the Finance Officer, University of Kerala, Trivandrum, specifying the post for which application forms are required.

The last date for receipt of application is 24th August 1978.

C. K. Devassy
REGISTRAR (Officiating)

GURU NANAK DEV UNIVERSITY : AMRITSAR

Advertisement No. 14/78

Applications are invited for the following posts on prescribed form obtainable (free of cost) from office of the Registrar, Guru Nanak Dev University, Amritsar by making written request accompanied by self-addressed stamped envelope of 23x10 cms. so as to reach this office by 17.8.1978 alongwith crossed Indian Postal Order (s) for Rs. 7.50 drawn in favour of Registrar, Guru Nanak Dev University, Amritsar. Application fee is not refundable.

NOTE

Persons already in employment must send their applications through their employers.

GRADE : (plus allowances as admissible under University rules)

1. Director of Physical Education (Grade Rs. 700-50-1000/50-1250)
- (2. Programme Co-ordinator (NSS) (Temporary) (Grade Rs. 700-50-1000/50-1250) (likely to be revised to Rs. 1100-50-1600)

QUALIFICATIONS

For Post at Sr. No. 1

i) At least Second Class Master's Degree in Physical Education with at least 50% marks or M.A., D.P.E. with 50% Marks in M.A. or D.P.E. or an equivalent degree.

(ii) 10 years' teaching or administrative experience in a college/ University of teaching/or organising inter-collegiate sports.

(iii) Qualified/efficient in coaching one or two major games.

(iv) Age between 30 to 50 years.

Preferable

Inter-University/State/National representation in a game of sports.

For Post at Sr. No. 2

(i) At least Second Class Master's degree or an equivalent qualification from a recognised University.

(ii) At least 5 years experience of teaching and educational administration

and (iii) Experience of organising extra curricular programmes.

Mohinder Singh Randhawa
REGISTRAR

GURU NANAK DEV UNIVERSITY: AMRITSAR

Advertisement No. 13/78

Applications are invited for the following posts on prescribed form obtainable (free of cost) from office of the Registrar, Guru Nanak Dev University, Amritsar by making a written request accompanied by self-addressed stamped envelope of 23 x 10 cms. so as to reach this office by 20-9-1978 from persons residing in India and by 10-10-1978 from persons residing in foreign countries alongwith crossed postal order(s) for Rs. 7.50 drawn in favour of Registrar, Guru Nanak Dev University, Amritsar. Application fee is not refundable.

NOTE : Persons already in employment must send their applications through their employers.

Grade : (Plus allowances as admissible under University rules)

1. Professor of Biology (Grade Rs. 1500-60-1800-100-2000-125/2-2500)
2. Lecturer in Guru Nanak Studies Department (Grade Rs. 700-40-1100-50-1600)

QUALIFICATIONS : For post at Sr. No. 1 : 'An eminent scholar with published work of high quality actively engaged in research. Ten years' experience of teaching and/or research. Experience of guiding research at doctoral level. OR An outstanding scholar with established reputation who has made significant contribution to knowledge.

SPECIALIZATIONS : Developmental Biology, Immunology, Biochemistry, Biophysics, Behavioural Sciences, Theoretical Biology, Ecology and Environmental Biology or any other area of modern biology.

NOTE : Those who have already applied against advertisement No. 5/78 need not apply again.

For post at Sr. No. 2 : (a) A Doctor's Degree or research work of an equally high standard in the Syntactical, Semantic, Morphological or Cultural Study of Prakrit/Apabhramsa. (b) Consistently good academic record with 1st or high 2nd class (B grade in the seven point scale) in the subject of Punjabi/Hindi/Sanskrit/Religious Studies/Philosophy/Linguistics/Pali/Prakrit / Apabhramsa. (c) Thorough lexical, grammatical and thematic knowledge of Northern Indian Medieval languages.

DESIRABLE : Knowledge of Persian/Sanskrit. Preference will be given to the persons knowing Gurmukhi Script.

NOTE : (i) The post is required for the project of the Translation of Guru Granth Sahib. (ii) Higher start to deserving candidates may be considered.

Mohinder Singh Randhawa
REGISTRAR

UTKAL UNIVERSITY
Advertisement No. ESTT. I/810c/
14703/78, dated 24.7.78.

Applications are invited in the prescribed form alongwith attested copies of certificates of all examinations passed for the following teaching posts in the University service on or before 21.8.1978.

- regular teaching in Post-graduate/Hons. Classes.
(b) READER:-The Reader shall have
 i) A good academic record with a First or High Second Class degree in the subject.
 ii) A doctorate degree or published work of equivalent standard
 iii) Independent published res-

Sl No.	Department	Post	No.
1.	Statistics	Professor	1 (one)
2.	Mathematics	Professor	1 (one)
3.	Political Science	Reader	1 (one)

Scale of Pay

Professor—Rs. 1,500-60-1300-100-2000-125/2-2500/-

Reader—Rs. 1200-50-1300-60-1900/-
 Age of Superannuation—60 years.

Essential Qualification

(a) PROFESSOR:-The Professor shall

- be a scholar of eminence,
- possess a good academic record with First or High Second Class Master's Degree in the subject,
- have a Doctorate Degree or published work of equivalent standard,
- have independent published research work of high standard in addition to the published work mentioned in (iii) above,
- be engaged in active research and have experience of guiding research of a considerable period as evidenced by successful supervision of doctoral research,
- be teacher for ten years out of which at least seven years should have been spent in

research work (in addition to the published work mentioned in (ii) above),

- Teaching and research experience for eight years out of which at least five years should have been spent in regular teaching in Post-graduate/Hons. classes, Capacity to guide research shall be regarded as an additional qualification.

Prescribed application forms can be had from the Registrar, Utkal University in person on payment of Rs. 7.50 only, or by post on receipt of a crossed Indian Postal Order for Rs. 9/- payable to the Registrar, Utkal University, Vani Vihar, Bhubaneswar-4. Money orders are not acceptable.

Candidates in Government service, if selected for the posts for which they have applied would be asked to pay pension contribution and leave salary in case they join the University service on foreign service terms and conditions.

The University reserves to itself the right to decide the number of posts to be filled.

REGISTRAR

GURU NANAK DEV UNIVERSITY: AMRITSAR

Advertisement No. 12/78

Applications are invited for the following posts on prescribed form obtainable (free of cost) from office of the Registrar, Guru Nanak Dev University, Amritsar by making written request accompanied by self-addressed stamped envelope of 23x10 cms. so as to reach this office by 10.8.1978 alongwith crossed Indian Postal Order (s) for Rs. 5/-drawn in favour of Registrar, Guru Nanak Dev University, Amritsar. Application fee is not refundable.

NOTE

Persons already in employment must send their applications through their employers.

Grade (plus allowances as admissible under University rules)

- Junior Research Fellows (U.G.C.) in Law and Economics (Rs. 400/-p.m. fixed)
- Proof Reader for Public Relations

Department (Grade Rs. 225-15-360-20-500)

3. Museum Assistant for Biology Department (Grade Rs. 145-7-180-12-300)

4. Artist for Biology Department (Grade Rs. 145-7-180-12-300)

5. Senior Laboratory Assistant for Chemistry Department (Grade Rs. 145-7-180-12-300)

6. Steno-typists in English (Grade Rs. 120-5-150/10-250+Rs. 25/-as a special pay)

QUALIFICATIONS

For Posts at Sr.No. 1

- First or High Second Class Master's degree in the subject concerned with good academic record.
- Aptitude for research.

For Post at Sr. No. 2

- At least Bachelor's Degree in Arts or Science;
- 5 years experience of Proof-reading in English, Punjabi and Hindi in some Govt. Press or a Printing Press of repute;
- Good knowledge of composing and experience of different type faces

For Post at Sr. No. 3

Pre-Medical or Higher Secondary/ Matric with over 5 years of experience in the preservation of animals.

NOTE

Those who have already applied in response to advertisement No. 9/78 need not apply again.

For Post at Sr. No. 4

Higher Secondary or equivalent with Diploma in Fine Arts.

For Post at Sr. No. 5

Matric with Science (F.Sc./I.Sc. Preferred) with at least ten years' University Laboratory experience in chemical work including preparation of reagents, standard solutions and maintenance of chemical instruments. In addition, knowledge of handling sophisticated instruments and inventory control is desirable. Persons having supervisory and administrative experience will be preferred.

Knowledge of typewriting in English and Punjabi will be an additional qualification.

For Posts at Sr. No. 6

- At least Second Division Matric/ Higher Secondary;
- Shorthand speed in English at least 80 w.p.m. and typewriting speed at least 40 w.p.m.;
- Knowledge of Punjabi upto Matric standard.

Mohinder Singh Randhawa
REGISTRAR

PANJAB UNIVERSITY
CHANDIGARH

Advertisement No. 18/78

Applications are invited for award of M.Phil. Research Scholarships @ Rs. 400.00 p.m. (fixed each in the subjects of Ancient Indian History, Culture & Archaeology, English, Geography, Hindi, Punjabi, Political Science, and Public Administration so as to reach the Registrar, Panjab University, Chandigarh, along with postal orders for Rs. 10/-by 1-9-1978.

QUALIFICATIONS

First or high second class Master's degree in the relevant subject with aptitude for research.

Persons already in service should route their applications through proper channel. Incomplete form and those received after the due date will not be entertained. Serving employees, may however, send their applications on the prescribed proforma direct to the University. They may route another copy through their Departments. They may be allowed to present themselves for the interview on the production of a "No Objection Certificate" from their employers. Canvassing in any form will disqualify a candidate.

Application forms can be obtained from the Cashier, Panjab University, Chandigarh, personally on payment of Re. 1/-or by making a written request to the Finance & Development officer, Panjab University, Chandigarh, accompanied by self-addressed stamped envelope of 23x10 cms. and a postal order for Re. 1/-drawn in favour of the Registrar, Panjab University, Chandigarh.

INDIAN INSTITUTE OF TECHNOLOGY, KANPUR KANPUR-208016

Advertisement No. 20 78

Applications are invited for a post of Librarian in the Central Library of the Institute in the scale of Rs. 1500-60-1800-100-2000-125/2-2500.

QUALIFICATIONS

Essential

First or high second class Master's degree in Science or Engineering and Doctorate degree or equivalent. Excellent academic record evidenced by way of publications of high standard in professional journals of repute.

Desirable

1. Candidates having first or high second class Master's degree in Library Science will be preferred.

2. Working knowledge of Hindi and of a modern European language other than English will be preferred.

3. Special consideration will be given to experience in modern Library systems and knowledge and experience in information Science, especially in the use of Computer's for documentation and information retrieval.

EXPERIENCE

At least 10 years of experience of teaching post-graduate classes and conducting research or in a position of responsibility in an academic or research library (preferably in a University or Technical Institute of higher education) or with extensive bibliographical activity in the areas of Science and Technology.

THE CANDIDATES MUST HAVE DEMONSTRATED ORGANISATIONAL ABILITIES AND LEADERSHIP QUALITIES AND MUST HAVE AN UNDERSTANDING OF ACQUISITION OF FOREIGN BOOKS AND JOURNALS.

The Indian Institute of Technology Kanpur is one of the five Institutions which were established by Government of India to provide higher technical education. The Central Library of IIT-Kanpur has a collection of more than 1,65,000 books and bound periodicals covering engineering technology, science, humanities and social sciences with current subscriptions to cover 1600 periodicals, and serials. The Librarian at this Institute will belong to the academic community, and will be a member of the Academic Senate. He will be responsible for developing the Library along modern lines, providing dynamic and imaginative leadership to the Library staff which includes over 60 members trained in Library works.

Other things being equal, preference will be given to Scheduled Caste/Scheduled Tribe candidates.

Post is permanent and carry retirement benefits in the shape of CPF Scheme or CPF-cum-Gratuity Scheme or GPF - cum - Pension-cum-Gratuity Scheme as may be opted according to rules. The age of retirement is 60 years. Besides pay, post carries allowances according to the Institute rules, which at present correspond to those admissible

to the Central Government employees stationed at Kanpur. Higher initial pay is admissible to exceptionally qualified and deserving candidates. Candidates called for interview will be paid second class railway fare from the place of duty to Kanpur and back by the shortest route.

Applications from within India must be made on prescribed form obtainable free of charge from the Registrar of the Institute by sending a self addressed unstamped envelope of 25 cm. x 10 cm. size. Applications should be accompanied by a postal order for Rs. 7.50 (Rs. 1.87 for SC/ST candidates)

Applicants who are employed in a Government/Semi-Government organizations or Institutions should send their applications through proper channel else they will be required to produce a 'No Objection' certificate from their employers at the time of interview.

Applicants from abroad may apply on plain paper enclosing a complete bio-data and names of three referees from whom reference letters may be obtained.

Applications should reach the Registrar, Indian Institute of Technology, Kanpur-208016 U.P. (India) on or before August 31, 1978.

UNIVERSITY OF BOMBAY

Sir J.J. College of Architecture

Applications are invited for the post of Principal in the University's Sir J.J. College of Architecture, Bombay, in the grade of Rs. 1500-60-1800-100-2000-125/2-2500. The post carries the benefits of Provident Fund and Dearness Allowance and House Rent and Compensatory Local Allowances at the rates sanctioned by the Executive Council from time to time. A higher starting salary may be given to a person possessing high qualifications. The appointment will be on probation for two years in the first instance, but the probationary period may be waived by the Executive Council in a special case. Other things being equal preference will be given to a candidate from backward classes.

An applicant should possess the following qualifications and experience:

Qualifications

Degree in Architecture of any recognized Indian University with First Class or a degree in Architecture of a Foreign University

Or

A.R.I.B.A. or qualifications equivalent thereto

Or

Master's degree in Architecture of a recognized Indian or Foreign University.

Experience

Seven years of teaching experience in a College of Architecture of any recognized University and 7 years of professional experience obtained either simultaneously with teaching experience or separately after passing B Arch.

Or

Six years of teaching experience in any college of Architecture and 6 years of professional experience obtained

either simultaneously or separately, after passing A.R.I.B.A. or M.Arch.

The Principal may be permitted to undertake consulting work subject to the terms and conditions under which the teachers in University Departments are permitted to undertake outside work.

Two copies of the application in the prescribed form, which can be had from the Registrar, should be submitted so as to reach the Registrar, University of Bombay, Bombay-32, on or before 14th August, 1978.

Candidates called for interview will have to present themselves at their own expense.

Canvassing direct or indirect will be a disqualification.

K.S. Kolge
REGISTRAR

THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA

Notification No. 4

Applications are invited for temporary posts of (1) Professor of Banking—one post (2) Research Assistant—Two and (3) Research Fellowships—Two, in the Reserve Bank of India Research Cell in Banking in the Department of Banking and Business Finance, Faculty of Commerce, M.S. University of Baroda, Baroda-2. These posts are temporary for a period of five years.

The prescribed application forms in six copies for the post No. (1) and one each for post No. (2) and post No. (3) and details of qualifications, experience and duties attached to the posts can be had from the undersigned on prepayment of Rs. 2 (Re 00-50 paise for Scheduled Caste/Scheduled Tribes candidates) by Crossed Indian Postal Order in favour of Registrar, M.S. University, Baroda along with a self-addressed envelope of 30 cms. x 12 cms.

Scale

Professor: Rs. 1500-60-1800-100-2000-125/2-2500 plus D.A., A.D.A., H.R.A., P.F. and Gratuity as per University rules.

Research Assistant: Consolidated salary ranging from Rs. 300-600 p.m. on tenure basis.

Research Fellowships: Rs. 400 p.m. for first 2 years, Rs. 500 p.m. for two subsequent years if the progress of work is satisfactory as per rules.

The application forms will be available upto 21st August, 1978 and request for the same thereafter will not be considered.

The application form should be accompanied by Crossed Indian Postal Order for Rs. 10.00 (Rs. 2.50 for Scheduled Castes/Scheduled Tribes candidates) payable to M.S. University, Baroda for Professor's post. For Research Assistantship/Research Fellowships the I.P.O. for Rs. 4 (Re. 1 for Scheduled Castes/Scheduled Tribes candidates) is required to be enclosed with the application. The last date of receipt of applications is 28th August, 1978. Candidates if called for interview will have to come at their own expense.

K.A. Amin
REGISTRAR

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All Excursion Fares are ex-Bombay/Delhi. For ex-Calcutta and Madras fares and other details, contact your travel agent or your nearest Air-India office.

AIR-INDIA

Stop dreaming. start packing.

AI. 3415 A

- **Problems of Technology Development**
- **Education Industry**
- **Indigenous base of Science and Technology**
- **Adult Education Programme**
- **Seminar on NCC**
- **Students Participation in National Development**
- **Priorities in Sports**
- **Commonwealth Universities Congress**

UNIVERSITY OF COCHIN

No. Ad. A1. 156/76(B)

Notification

Applications in the prescribed form are invited from qualified candidates for appointment as Development and Planning Officer on Rs. 950-1450 in the University.

Qualification Essential

- (i) Master's Degree from a University, preferably in the first class or an equivalent qualification.
- (ii) Seven years of experience of which at least two years must be in teaching at University level, and at least two years in administration.

Desirable

Preference will be given to candidates whose experience is in the area of Planning either in teaching or in Administration.

Age

Must have completed 35 years, but less than 45 years as on 1-7-1978.

Note

The age and two years of experience in teaching in the case of non-teaching staff and that in administration in the case of teaching staff are relaxable in the case of persons who are already in the service of this University.

Registration Fee: Rs. 25 (Rs. 6.25 for SC/ST Candidates)

The upper age limit will be relaxed by 5 years for persons belonging to Scheduled Caste/Scheduled Tribes and by 3 years for persons belonging to Backward classes.

The application forms with further particulars can be had from the office of the Registrar, University of Cochin, Tripunithura-682301 on payment of Rs. 2 by cash or Money Order specifying the purpose in the Money Order Coupon. If the purpose of remittance is not given in the Money Order Coupon, it will not be accepted. The receipt of remittance should be attached to the requisition for the forms.

The candidates will have to appear for an interview, if called for at the place which will be intimated later, at their own cost.

The completed applications should reach the University Office on or before 31.8.1978.

Appointments to the posts will be made strictly in accordance with the Section 6(2) of the Cochin University Act 1971 (Act 30 of 1971).

REGISTRAR

* * *

ANDHRA PRADESH AGRICULTURAL UNIVERSITY

Administrative Office "Central Library Building" Rajendranagar,
Hyderabad-500030

Advertisement No. 8/78

Applications in the prescribed form are invited for the undermentioned posts, so as to reach the undersigned on

or before 31-8-78. Application forms together with details of qualifications and other particulars for all the posts can be had from the Registrar, Andhra Pradesh Agricultural University, "Administrative Office, Central Library Building, Rajendranagar, Hyderabad-500030 on payment of Rs. 2 in person or by M.O. or Postal order (uncrossed). If the applications with details of qualifications are required to be sent by Registered post, an extra amount of Rs. 2.30P should also be sent. Candidates who are abroad may apply on plain paper together with International Money order for Rs.7 to cover the registration and application fees. Their applications will, however, be accepted upto 14-9-78. Applicants should be prepared, if so required, to appear for personal interview unless specially exempted. It is open to the University to fill or not to fill the posts now advertised. Note: Those who are working temporarily in this University in the posts mentioned below may also apply.

FACULTY OF AGRICULTURE

1. Professor of Extension Methods.
2. Professor of Entomology
(The post at Sl. No. 2 is for a period of 2 years.)
3. Senior Scientist in Rice.
4. Senior Scientist in Horticulture.
5. Associate Professor in Insect Physiology.
6. Associate Professor in Insect Taxonomy.
7. Meteorologist (Agricultural Meteorology)
8. Bamboo Breeder (Plant Breeding)
9. Assistant Professors and its equivalent posts in Physics (Basic Course).

FACULTY OF VETERINARY SCIENCE

10. Professor of Microbiology.
11. Professor of Pathology.
12. Assistant Professors and its equivalent posts in Anatomy.
13. Research Assistant in Dairy Science (Plant Management)

(The post at S.No. 13 is reserved for Scheduled Caste/Scheduled Tribe/Backward Class. Candidates belonging to other communities may also apply, who may be considered, if the candidates from the castes for which the post is reserved are not available.)

Scales of Pay

Posts at S. Nos. 1, 2, 3, 4, 10, & 11

Rs. 1500-60-1800-100 - 2000 - 125/2-2500 (With an assessment at the stage of Rs. 2000)

Posts at S.Nos. 5, 6, 7 & 8

Rs. 1200-50-1300-60-1900

Posts at S.No. 9 & 12

Rs. 700-40-1100-50-1600

Posts at S.No. 13

Rs. 530-30-770-35-1050 (D.A. merged)

**V. Gopalakrishna
REGISTRAR**

* * *

ANDHRA PRADESH AGRICULTURAL UNIVERSITY

Administrative Office, "Central Library Building" Rajendranagar,
Hyderabad-500030

Advertisement 9/78

Applications in the prescribed form together with a Registration Fee of Rs. 5 are invited for the undermentioned post in the Andhra Pradesh Agricultural University so as to reach the undersigned on or before 31-8-1978. Applications received after the prescribed date, those received without evidence of having paid the registration fee and those submitted in a form other than the one supplied by this University will be summarily rejected.

REGISTRAR

Scale of Pay : Rs. 1400-60-1700-75-1925.

Qualifications

- (i) At least a good second class degree of a recognised University.
- (ii) Administrative experience of at least 10 years in a University, a teaching and research institute, in a department of Central or State Government Administering Scientific and Technical Institutions or in a commercial firm running its own laboratories and employing a large number of technical and scientific staff;
- (iii) Experience in drafting rules, regulations; Proceedings of Board meetings, examination schedules and custody of confidential records.

Age : (Desirable) Below 45 years.

2. The persons selected for the post of Registrar will be on probation for a period of one year on duty within a continuous period of two years.

3. Persons already in service must submit their applications through their employers, sending an advance copy direct so as to reach the undersigned within the prescribed date. Selection in their cases will, however, be subject to employer's agreement to relieve them.

4. Application forms can be had from the Registrar, Andhra Pradesh Agricultural University, "Administrative Office" Central Library Building, Rajendranagar, Hyderabad-500030 on payment of Rs. 2 in person or by Money order or through postal order (uncrossed). If the application form is required to be sent by Registered post, an amount of Rs. 2.30p should also be sent.

5. Candidates who are abroad may, however, apply on plain paper together with an International Money order for Rs. 7 towards the Registration and Application fees. Their applications will however be accepted up to 15-9-1978.

6. Applicants should be prepared to appear for personal interview at their own cost unless specially exempted. It is open to the University to fill or not to fill the post now advertised.

**V. Gopalakrishna
REGISTRAR**

UNIVERSITY NEWS

Vol. XVI
No. 16

AUGUST 15
1978

A Fortnightly Chronicle Price
of Higher Education 80 Paise

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*Opinions expressed in the articles
and reviews are individual and do
not necessarily reflect the policies
of the Association*

Hony. Editor : ANJNI KUMAR

Education Industry

J. N. Kapur

Information

31 AUG 1978

The analogy between educational processes on the one hand and industrial and business processes on the other, is quite instructive and useful. Here, raw inputs (students) arrive at a plant (educational institution) and are processed (taught) and converted (educated) and eventually turned out as a finished product (a degree recipient) which is examined for its quality and stamped appropriately (with a degree and a division). Education industry in most countries is the biggest or the second biggest in terms of investments, budgets and number of persons employed.

The analogy however begins to breakdown beyond a certain point. The raw materials quite often refuse to be processed and withdraw from the system arbitrarily. In primary schools in India 50 per cent of the students withdraw themselves before reaching the sixth stage of processing and most of them relapse into illiteracy. They represent waste-products of the industry. Even out of those who survive the fifth stage of processing, 70 per cent withdraw before reaching the tenth stage and become by-products of the system.

The raw materials which come to educational factories vary widely in their quality. Some come from well-used mines (families with traditions of learning) and are willing to be processed and converted into finished products and even command reasonable price when they enter the market. There are others which come from unused mines (families with no tradition of education) which often resist processing and in spite of all facilities during processing do not command the same price in the market. The Government has therefore to force the purchasers to buy these inferior finished products (job reservations). The better finished products then protest against this preferential treatment (anti-reservation agitation) and this leads to a tension in the market.

Those responsible for processing the raw materials (i.e. the teachers) also differ widely in their quality and preparation for the job. The plants (institutions) in which processing is done are quite often too small (and sometimes too big) for efficient operations (more than 60 per cent colleges in India are uneconomic and unviable) and are uneven in their facilities.

At the beginning of every academic year, a great deal of raw material (high school graduates) comes to universities, apparently to be processed and converted (educated) but really for getting stamped (getting degrees). The factories keep the raw material for two or three years and give the impression that the material is being processed. At the end of this period, the material is sent to the quality control unit. Here in many factories there is a great deal of

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Problems of Technology Development

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The state of underdevelopment, large disparities in income and living styles, and deprivation of considerable sections of the elementary needs in Third world countries are results of socio-political practices, including technology, that are prevalent. Any plan of action to change this order, requires along with other programmes, development and application of science and technology. During the past two or three decades several governments in developing countries raised financial support for science and technology education and research. Yet in a majority of the countries the desired results are not achieved. Though certain sections appear to have made some advancements the overall conditions have been deteriorating and constitute a challenge to scientific community and the governments in respective countries. No adequate attempts are made, so far, to understand the nature of interaction of science and technology with the total social activity in the specific conditions of each of these countries and to evolve suitable science and technology policies and programmes compatible with social objectives and cultural values and induce the necessary dynamism in economic growth and bring social justice.

However, some features of the erstwhile practices in science, technology and economic development and their results can be briefly stated as:

- (i) The patterns of growth, as practised in the developing countries are poor imitations of those in advanced countries, and they do not yield the desired results in the new surroundings.
- (ii) These practices have led to the creation of an alienated section, symbolized by ostentatious living and exploitation in the otherwise traditional systems in terms of production and distribution.
- (iii) Science and technology development in Third World countries, excluding some exceptions, is directed to serve the demands of alienated sections, which in turn are imitations of the life styles in advanced countries.
- (iv) Along with widening economic disparities in these countries the gap between science and technology on the one side and the production systems and social life of the masses on the other has been increasing. The main objective is to reverse this trend and evolve science and technology programmes which would be initiators of such changes.

Role of national governments

Even on the shrunken globe, development is a national phenomenon. The national governments have a primary responsibility to organize the societies in a coherent way to achieve the national goals, of course

in the context of international developments, availing material and knowledge resources that could be drawn. There is immense diversity among the developing countries, in historical and cultural factors, natural resources and climate, production and distribution systems, economic and technological levels and even in aspirations and social objectives. There are some common features such as low levels of productivity, considerable sections of the society being left out of production and distribution systems, and basic human needs such as nutrition, shelter, health facilities and education being not accessible to a large section in each of these countries. One can without hesitation prescribe 'development planning' but uniform prescription of programme is not feasible and undesirable.

In development of technology and its application, though the whole community has some role or the other, for the purposes of preparing and implementation of policies and programmes, besides the national governments, who organize and co-ordinate the total development process, science and technology establishment in each country which has responsibility in education, research and development, and the innovation users in agriculture, industry and social services are the main agencies involved. The role of national governments in development and application of technology remained undefined until recently in advanced countries but now in these countries too, either to sustain the economic prosperity or to eliminate some of the adverse features of erstwhile developments that are becoming apparent now, the responsibilities of the governments have become significant.

International conferences, like UNCSTD, have a role, of course limited, in providing opportunities and facilities for periodic assessment by each government and national agency to review their experiences, exchange these experiences and draw guidelines for future action. These reviews, exchanges and guidelines may provide direction for evolving policies for international agencies whose programmes can have a catalytic role in the development processes of the Third world countries. While the experiences of a large number of developing countries are paramount in drawing future plans, doubts are expressed already about seriousness and competence of several countries even to prepare national papers meaningful for the purpose. There are institutions and scholars who have no confidence in anything worthwhile being derived either in preparation or at the conference or thereafter. However, agencies like UNCTAD who have some experience of the condition prevailing in developing countries in development, transfer and adaptation of technologies in economic development can present their experiences.

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Some of the deficiencies that have been noticed during the last few years in development, transfer, adaptation and utilization of technology, in developing countries are:

- (i) Often there are no policies for governments on development or transfer of technology.
- (ii) In the absence of specific administrative guidelines the decisions are piecemeal, fragmented and incoherent.
- (iii) In many of these countries there are no economic plans or the plans are too vague. R and D organization, legal arrangements and fiscal policies are not integral components of socio-economic policies.
- (iv) In the absence of such policies, executive sanctions and administrative decisions are ad hoc and positive content of each is nullified by the negative aspects of others.
- (v) There are no national agencies to continuously study and provide guidelines to the governments and industrial units on the impact of different technological programmes on the socio-economic life of different sections of the community, nor to provide guidelines in technology transactions.
- (vi) Decision making, in general, is fragmented, administrative, legal, financial, security, etc., and these governments have not been able to build up multidisciplinary groups to assess comprehensively the impact of decisions. Even advanced countries have no satisfactory arrangements in this respect.
- (vii) Excessive weapon purchases for security and consequent diversion of technological programmes in directions not congenial to local conditions, which finally do not satisfy the security needs either.
- (viii) Relatively low investments in rural areas where natural resources and work forces are located in developing countries, leaves no scope to employ technical personnel in rural areas. In the process, the sections of the community which need technical support to a higher degree than others are deprived of it.
- (ix) Trade and education policies are such that they drain off the material resources and technical skills from the rural areas, by stages to urban regions and finally to developed countries.

Unlike in the past and in advanced countries, no development with social justice is feasible in developing countries without a systematic efforts and planning. While there are too many ways one can go wrong, only a few paths lead to the desired destinations, particularly with limited resources. Science and technology are important not only in solving problems in agricultural and industrial production but also to provide an understanding of interrelationship between different sectoral activities in the context of scientific and technological advances and to make the process of decision making in government and daily life of people rational.

Science and technological apex bodies

In the history of mankind each of the different social activities, like religion, might to fight wars, trade, capital, played a major role. In the present times, there is no doubt that science and technology development and application are decisive factors in social progress. Though excessive importance to any one factor is undesirable, the need in developing countries, where the deficiencies in these sectors are obvious, for rapid development of these sectors cannot be overstressed. In some form or the other, every developing country requires a national science and technology body to advise the government on matters in which scientific knowledge and analysis are relevant, to formulate science and technology plans and programmes in close collaboration with economic development planning bodies and ministries, to co-ordinate science and technology education and research, professional societies and institutional infrastructure, to evolve suitable rewarding system, to oversee the execution of science and technology R and D programmes carried out by different agencies, to assure administrative, legislative and financial support and co-ordinate national R and D activities with the programmes undertaken by regional and international agencies.

This body, to enable itself to formulate and periodically update science and technology plan requires information and analysis on the impact of science and technology programmes on other social activities. These studies are to be carried out by either suitable staff in the national body itself or entrusting to different institutions, often the scope of the studies to be carried out is different for varying situations. For example, technology assessment studies in the U.S.A. are carried out to assess the implication on pollution, energy consumption, privacy etc. The purpose of such studies in developing countries would be qualitatively different and may include factors such as capital needs, employment opportunities, nature of displacement of traditional uses of materials, effects on income distribution, etc. The developed countries may not have to deal with problems of this nature and probably could function efficiently without them as they evolved over decades or centuries inbuilt mechanisms in the existing institutions to fulfil these social objectives. Such links are often invisible. But in developing countries without a planned effort new programmes and traditional modes of institutional functions are in conflict and the efforts go waste.

As this national body is not merely for promotion of science and technology, at each stage socio-economic consequences of plans and programmes are to be clearly understood, it should consist of scientists and technologists with professional competence and awareness of social impact of their programmes and also a reasonable fraction of the members should be social scientists who have a critical appreciation of functioning of science and technology professions. Some of the members are required to be engaged in this work whole time, while others could have their responsibilities in allied fields. The whole time

scientist-technologist chairman, acting as a scientific advisor to the highest executive authority and his cabinet, should be able to serve as the main communication channel between the science and technology establishment and other executive branches of the government.

This body is to be assisted by a secretariat of reasonable size, consisting of scientists technologists and social scientists, familiar with administrative, legal and financial aspects. At the first instance, it may appear that developing countries do not have personnel to handle such problems but if situations for such activities are created, not only competence in these sectors would be acquired but also more awareness will be attained of these problems among professionals in different sectors. Even in countries, where the existing science and technology establishments are small, an apex body and its functions are important to assure growth in the desired directions. In fact for some years after World War II, it was thought growth of science and technology in the new independent countries will result in economic development. The experience in several countries have proved otherwise. There are several countries in which science and technology activities increased manifold, even one hundred times, without these becoming instruments of economic advancement.

In small countries too, the need for an apex body on science and technology remains. In these countries, the necessity to enhance the value of the limited natural resources and labour by converting them into high value products is more urgent than in large countries. This is now possible only by judicious development and application of science and technology. Regional co-operation in transport, development of irrigation systems, communications, etc. is urgent for small countries too. Co-ordination in trade and agronomical practices along with science and technology can be carried out to yield meaningful results only with necessary scientific analysis and understanding. In case, setting up separate apex body is not immediately feasible at least an interministerial co-ordinating body, with an appropriate, secretariat, is necessary.

Technology in production system

In developing countries, the majority of which attained independence in recent years, excessive importance is given to political and security issues, the objectives of which cannot in anyway be attained without economic growth and technology development. In several regions scientifically evolved development programmes of mutual economic advantages to participating countries alone can reduce tensions and help move towards understanding, peaceful co-existence and social progress. In each of these countries programmes of development, with self-reliance and confidence, can be formulated and implemented only by giving due importance to science and technology and scientific methods. Erstwhile governments actions are confined, in matters of technology, to decide only the terms of import of technology or licensing import of technological products and the associated financial aspects. While

in exporting too, efforts are confined to price bargaining with the world centres of trade located in developed countries. While introducing new techniques in agriculture or utilization of natural resources, no efforts are made to assess the impact on the basic production centres, i.e. rural parts in these countries. Social change and economic advancement are expected by what appeared to be the usual market forces by gradual extension to production and distribution systems. The limitations of commercial aspects in the production and trade practices are understood only in recent years. The rich becoming richer and the poor becoming poorer is all one phenomenon at international and national levels, and the technologies that are being propagated have their share of contribution to this evil.

Technology development and transfer effort in developing countries is decided by the exigencies of outside events and are confined to the immediate "demands" of narrow urbanised and westernised sections, often influenced by fashions and living styles in advanced countries. Investments are confined to limited areas and tend to enhance the productivity and labour value of only a small fraction of the total labour force. For the last few decades, it has been the general impression that science and technology have multiplying effects in industry but not so much in agriculture. This has been created, not because of inherent limitations of science and technology, but because industrial technology protected by law and trade, in the process of its evolution in the western countries, provides a means for commercial exploitation, while technologies have to be used in agriculture and rural areas cannot retain proprietary features to serve commercial interests of very narrow sections in the society. Technological products with proprietary interests are introduced indiscriminately without bothering about the adverse consequences to considerable sections of the population. The legislations on such matters are inadequate and whatever exists is only on paper and cannot be implemented in the rural areas. In the sectors which need science and technology most, scientists and technologists are not involved; only some products flow there but technical personnel to use these products effectively, demonstrate their use and study the implications are no where in the picture. These deficiencies cannot be eliminated without concerted effort and comprehensive approach and science and technology planning in developed countries.

In the developing countries, as in the free market economy advanced countries, the main technology consumers are private business and industrial entrepreneurs. Public sector units and public services too are users of technology. But the economic benefits arising from both these sectors accrue to the same sections because basically the products and processes are similar. The following deficiencies are noticed in industrial technology of the developing countries:

(i) In the majority of cases technologies introduced are based on marketing norms, in which profit being an accepted criterion, non-utilitarian aspects get undue importance.

(ii) Most of the industrial entrepreneurs in developing countries are erstwhile tradesmen who, to overcome government restrictions, initiate some sort of industrial production, and they do not have the necessary interaction with science and technology establishment.

(iii) Only a minority of the population in each developing country comes under market economy and the scales of production are invariably very low. High profits are assured without competition to reduce the costs of production. Not only is there no urge to introduce innovations but also there are vested interests in avoiding them.

(iv) Technology acquiring and using parties in developing countries have no R & D units, nor technologists of different specializations are employed by them to provide technical support in negotiations and implementation of programmes.

(v) Trade names, brand names and commercial practices acquired by these parties become their main assets in the market and they are anxious to perpetuate them and become willing collaborators of the foreign interests.

(vi) Neither the technology acquiring party in a developing country nor its seller in a developed country is interested in involving R & D institutions outside their own institutions as both are interested in guarding their trade assets and divulging any information is considered a risk. This excludes possibilities of multiplying or reinforcing efforts.

(vii) The technology acquiring parties face problems which the suppliers do not find in their countries, and in the absence of necessary local support not even meaningful dialogue is possible between the acquiring parties and suppliers.

(viii) Piecemeal industrialisation through isolated units enhances costs enormously in the acquisition of materials, erection of production units and servicing them with undue delays.

(ix) Any export of industrial products from developing countries is nearly impossible with above drawbacks and domination of markets by large corporations of the advanced countries. Where some exports are made it is only depriving the poorer sections further and with direct or indirect public subsidies.

(x) Any technology applicable in a large scale has to be through public sector agencies where bureaucratic systems limit the flow. Besides, they work in the same culture as the private sector and many defects are common.

To serve the two broad objectives, economic development and reduction of disparities, science and technology programmes to be implemented in developing countries should have the following features:

(i) The technologies should be almost cost free and accessible to the sections which need development most, and congenial to mass participation in production of goods, their use and public services;

(ii) the focus of any strategy in economic deve-

lopment and technology development should be the rural poverty, and

(iii) as each programme serves only certain sections, a suitable combination of technologies should be implemented simultaneously to assure proper distribution of benefits.

Technologies of mass utilization, instead of those to be used by individual entrepreneurs with profit motive alone, should get priority. Not only buying and adapting costs of too many items selected by small sections with diverse interests add up, but the investments in that many units, each working at a sub-critical level, working with conflicting interests, neither help effective development of technology, nor lead to genuine economic growth and self reliance. As problems of development are multi-faceted, in agriculture too, rural health, recycling agricultural wastes, housing with local materials, protecting and management of water resources, etc., are required to be taken up in suitable combinations, to make the programmes economical and effective. The combination of technologies which mutually support are to be evolved to simultaneously bring economic growth and social justice. The most important feature being to assure employment which again is feasible only when the economic outputs are reasonable. The governments should concentrate on selection and use of the technology mixes required to serve such a purpose. Such programmes need a high degree of co-ordination at various levels including among the international and regional services. Even in bilateral transactions, technology suppliers too would have to find ways of co-ordinating their efforts.

Development of rural economy obviously needs the support of industries such as transport, agricultural tools, processing agricultural products and wastes, development of decentralized energy resources and conversion, etc. and development of urban areas. Only when they are planned with specific objectives, the programmes are coherent and mutual support becomes effective. Along with policy formulation, routine monitoring and study of the changes taking place are to be carried out in an organized way to sustain the socio-economic dynamism.

Science and technology education and R & D

Changing from one system of production to another, in the case of developing countries from traditional methods to scientific methods, and application of science and technology, not only up-grading skills constantly but also building new relationships between different sections is required. New problems of co-ordination arise, not because there was no co-ordination earlier, but they are qualitatively different if new techniques are to be adopted. This feature necessitates a new understanding at each stage, in the whole population. The importance of education and involvement of professional groups at all levels are imperative. Education is not synonymous with literacy. Traditionally, work experience and proficiency are themselves education, and many people in developing countries have considerable wisdom

without being literates in the conventional sense. Any education programme that has to serve broad sections of people in developing countries must avail the prevailing forms, introduce new contents and evolve a new system. Only such a process of combination of traditional and new methods can be smoothly absorbed and improve the competence of people in their socio-economic life.

In most of the developing countries, like newly acquired technologies and traditional modes of production functioning independently and often in conflict, the new educational patterns and traditional learnings are being followed by different sections, widening the economic and cultural gap between them. It is not only the content, but also the very language is different, and after a few years of modern education dress, too, becomes different and social alienation is complete by the time the modern educated person enters a profession. In general, there is narrow specialization too early and the education itself is more a competitive race for white collared jobs and positions than a training for cooperative products work. The very virtues of cooperation and wider understanding of social processes are gradually curbed. Education and professional activities in social sciences, natural sciences, engineering and medicine, each growing independently of the other, tend to divide social action into competing fragments. The very process of education often shifts persons from productive work and co-operation to separation, resulting in braindrain. In most of the developing countries, and to some extent in several developed countries, there is no communication between social scientists on one side and natural scientists and technologists on the other. Behavioural science, so important in understanding social dynamics and planning socio-economic programmes, is completely neglected. There is an urge to aim at vague excellence in narrow fragmented directions. Whenever resources are allotted for education, too many graduates and post-graduates are trained. Intermediate level training, necessary for performing technical work jobs, is neglected.

Having allowed higher educational institutions to grow more as a part of cultural activity and symbols of national prestige, each time a need is felt for special skills, there are no efforts to reorganize one or a few of the already existing institutions, but new ones are initiated and they drift into the same culture of autonomy and prestige, graduates and post-graduates from them seeking the same type of desk jobs. Mere growth of institutions or infrastructure is no guarantee of economic development. Already several developing countries incur disproportionately high expenses for university education with no tangible economic benefits. Even the extension departments in agricultural universities have become academic departments like others.

Many developing countries have no research facilities. In some developing countries there are complex infrastructures. Some do have well organised R & D establishments with competent research staff. But they do not have any meaningful impact on the

economic development, particularly on poor sections. R & D in these countries has not grown from the local requirements but has been transplanted from external sources. Some scientists in these establishments can compete with their counterparts in developed countries and make a name for themselves individually. However, when it comes to using such science for solving the problems of their own country they find themselves out of place. Even the research institutions in their own countries are found highly unsuitable after they attain some recognition. While the problem requires multidisciplinary approach and team work, the R & D workers are busy seeking individual excellence. After neglecting the study of basic problems of rural areas, they prescribe simplistic solutions that intermediate or obsolete technology would be adequate to the poor.

Broadly, the weaknesses of the R & D set up in developing countries to gear their work for economic development can be summarised as:

- (i) In developing countries the R & D institutions are subcritical in size and organisationally very weak.
- (ii) They are autonomous in their growth and not linked with industry or agriculture.
- (iii) Governments often consider them as part of cultural activities and they are not involved in evolving economic programmes and their implementation.
- (iv) Technology education and R & D are closer to institutions of that nature abroad than with local industry which is also not interested in having close links with R & D.
- (v) Reward systems in R & D establishments are similar to those in academic institutions based on peer judgements and individual excellence. The technology R & D systems having not established the necessary links with production system, their norms of administration and rewards are similar to those in the institutions of pure science research.
- (vi) By education, language, and often by dress too, the scientists and technologists belong to the elite and are alienated from the producers of goods and confined to laboratories and offices and are not familiar with the problems of production.
- (vii) The stratification that exists discourages people with intermediate skills, particularly important in industry and agriculture.
- (viii) The choice of projects in research appears autonomous but in practice it is imitative of the trends in advanced countries, R & D set up is a financial burden to the native land and acts as a distant appendage to the R & D of advanced countries.

While in advanced countries, it costs five or six times the per capita national income to maintain one R & D scientist at work, in developing countries the cost is about one hundred times the per capita income

in that country. Yet the output is low and even the small output only subserves the interests in advanced countries. This is required to be reversed. In the first instance R & D in developing countries is to be directed to find solutions to the problems meaningful to the vast majority of their population. Then it might be possible for some scientists and technologists in advanced countries to co-operate in such efforts. This demands re-educating or self-education among the R & D staff to acquire the techniques of working for the socio-economic development of their people. This new orientation is possible only by active participation of the technically qualified people in the production processes in agriculture and industry and obtaining the comprehension of the problems and specific needs. To achieve this, a reasonable fraction of the scientists and technologists are to be engaged, by rotation, in implementing their research results in production and to identify the problems for studies through practical experience. In this type of field work too, a scientist or technologist need not work in isolation as others from different disciplines too have to be in the field, new groupings which are not possible now in the laboratories, are evolved, and interaction to identify and understand the real problems in enhancing the productivity and providing services becomes feasible. The technical services working people get by such a process will be an immense education. By close association of this nature, some efficient traditional practices, if they are rationalized and standardized, can be propagated to other regions and such practices can lead to new technologies and even new science.

Technologies developed in the international agricultural research institutions, with regional modifications, are widely practised in several developing countries. Though some socio-economic problems arising out of such uses are not yet effectively tackled the benefits have accrued to broader sections. This cannot be said of the technologies flowing through commercial channels. The latter are highly fragmented, costs are high, and their applicability is limited to very narrow sections of the community, and the resources to implement them have to be drawn from wider sections which do not get the benefits. Methods have to be evolved to transfer technologies in compatible packages, to avoid bottlenecks and find wider applicability. International agencies have to identify their role afresh.

It is in the above context, UN agencies, other international organizations and regional bodies have to evolve their policies and programmes of work. While major responsibilities are with the respective governments and each of the outside agencies can carry out certain developmental experiments, international bodies can conduct studies on these various experiments which, in turn, will provide guidelines for action in different developing countries. A New International Economic Order implies new social relations which cannot be decided by any set of finite number of criteria. A better understanding of social dynamics in the application of science and technology has to be attained by continuous studies on the impact of technologies introduced in different coun-

tries under various conditions. These studies are to be conducted while carrying out action programmes. Studies of static relations are highly inadequate. The changes in developing countries are varied and rapid. Problems of development are 'knotty'. There are no easy solutions. Imitative actions and isolated programmes are attempts to seek easy solutions. Their limitations are already known. It is in this context that new norms of action and co-ordination between national and international agencies have to be evolved. □

Education Industry

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corruption (copying, unfair influences) and the quality marking is most unreliable. In spite of producing consistently low quality products and then stamping them wrongly, the licence to grant degrees is not withdrawn, though in some countries, with a system of accreditation, this can happen. In India, the UGC was established to co-ordinate and maintain standards, but it has not been able to do this job as effectively as the Indian Standards Institution in case of some other industries.

There are some who believe that education will become a highly efficient industry responsive to the needs of society, if students as consumers are required to pay the full cost of education they receive so that economic laws of supply and demand operate fully. One example of this is the Indian public schools systems. Here the parents are prepared to pay the full cost of education, even when they have to make considerable sacrifices for buying this costly education. In colleges and universities also the fees charged should be sufficient to meet the full costs of education and different colleges and universities should be allowed to charge different fees according to the quality of their services and depending on the courses they offer.

The Government's contribution to higher education should be used: (i) to meet all research costs in education; (ii) to meet the educational expenses of students from economically backward sections of society and (iii) to pay part of bad debts given by banks to students for their studies.

The system of loans for higher education should be developed and every student should be expected to pay back these loans from the earnings he makes in later life. When a student knows that he has to pay back the loan, he will put in his best for his education.

Less costly forms of education through evening classes and correspondence education should also be provided. In fact all employers should be required by law to give facilities to their employees to acquire higher educational qualifications relevant to the needs of their jobs. □

(Courtesy : The Hindu)

Open University, not a replica of traditional set-up

V. A. Shahane*

Open university has been conceptually recognised as one of the major needs of higher education in India today. As part of educational word-play, it has sometimes been called a university without walls. The open university experiment in the UK and similar experiments in Germany have been eminently successful.

The Fifth Plan rightly emphasised the need to strengthen continuing educational programme in Indian Universities such as the starting of correspondence courses/schools of study/contact centres. However, the essential will to establish it is lacking among educational planners and administrators. It is obvious that a large country like India with an ever-growing population and an ever-growing number of seekers after higher education needs an open university very urgently; but, true to their conservative salt, the planners have done precious little in this area apart from holding idealistic seminars, passing pious resolutions and preparing neat blueprints. The gulfs that divides preaching from practice in education has never been so wide and pervasive as it is in this area.

An open university in India must develop its own model different from that of the UK or Germany primarily because higher education as imparted by it should not be divorced from the world of work. This new university must break new ground and should not be an open air replica of traditional citadels of learning. It should not be a mere appendage of the existing university structure. It must be self-sufficient, autonomous, independent so that it can grow into its own 'identity'. It must design courses which are closely related to the needs of learners. It can break new ground in drawing a new map of learning and fulfilling an academic function which the traditional universities have failed to do. It can formulate contextual courses bearing in mind the linked nature of the undergraduate curriculum. It should aim at synthesising the 'general', 'specialised' and 'practical' patterns of education. It should achieve the targets set by the concept of the 'schools' in advanced universities enabling the student to discover 'relations' between subjects and also between areas of knowledge and realms of life. New kinds of

courses, some interdisciplinary, may be designed (e.g. on 'Contemporary India,' Modern European Mind' 'Language and Values'). Some could be 'foundation courses', and others advanced ones. They should aim at not merely planning for the present but also for the future.

It must also abandon traditional modes of examination and devise work-oriented and experience-oriented evaluation methods. It should not entirely depend upon the existing academic hierarchy of professors, but must draw talent from a wider spectrum of the community. It should make use of multiple media: however, to begin with, it may use English and at a later stage Hindi, Tamil, Telugu, Bengali and Marathi as resources permit. The importance of English as a medium and a means of national integration must be recognised.

An open university may be established in Delhi with at least three more centres in major cosmopolitan cities like Bombay, Calcutta and Madras. This will benefit a large number of learners in big cities: extension to small towns and rural areas should be built into the system. Planning and execution must be done with scrupulous care and politicians should not be permitted to interfere with it. This open university must concentrate its efforts on the needs of the learners in specific regions and encourage qualitative acquisition of knowledge.

It is true that a student of the open university will be deprived of regular university teaching and lectures. It must, however, be confessed that the lecture system, as it is practised, has become almost an antiquated abomination. It is indeed beneficial to the learner to be left to the tender mercies of an anonymous, ill-organised, overcrowded lecturing class? Lecturing in colleges and universities seems almost a fortuitous exercise of disparate qualities. On the contrary, a written lecture is more likely to be logical, substantial, argumentative and even thought-provoking since it involves great preparation on the part of the professor. A learner will get more out of it than through a crass combination of casual approach and ponderous pseudo-scholarship.

Such a university must keep its standards high and should not entertain any 'soft options'. It is likely to be comparatively free from the periodic invasions of university citadels by politicians since it has no direct dealing with students. It must also guard against a more dangerous species—the teacher-politician since the dangers of internal subversion are greater than those of external aggression.

A new open university has to be tended with great care. If high standards are set and fostered, an open university student will be proud of his achievement and his university. In colloquial usage he will have no chips on his shoulder: he will not be a victim of inferiority complex. On the other hand, the open university, if badly administered, may turn out to be worse than some of the existing universities with their non-formal appendages. □

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(Courtesy : The Hindu)

Need for indigenous base of science & technology

Science today has become a major profession, with large numbers adopting this profession because they are technically competent to do so, though they may not be motivated by the spirit of enquiry that one would have thought as an essential characteristic of scientists of an earlier period; this has resulted in a transformation of the scientific community from one which was entirely built up of people with an inner urge for discovery, to one where a large number employ their technical skills to perform tasks which, with the sheer power of these skills and the efforts put in by large numbers, result in discoveries. A large part of science today is characterised by team work. The American

have not found the optimal methods of organisation and management. But the effort in this direction has meant that a large part of the scientific community is not based on natural philosophers, like the ones of the renaissance characteristic of the Bengal school in the first quarter of this century. Indeed the world over, natural philosophers in the scientific community are becoming an increasingly smaller fraction. In earlier periods, scientists were concerned with society, but as individuals; now they are concerned with society because of the social implications of science and the symbiotic relationship that exists between science and society; surely this involvement with social questions takes away something

within oneself and one's surroundings, and were not motivated by alien fashions or dictates. In these circumstances, everyone gave of his best, in all stations of life, from the lowest to the highest. In the years that have gone by since then, this sense of nobility and of public morality has, gradually given way to highly materialistic value systems and purely imitative approaches.

Irrespective of what has happened in the immediate past, in addressing this Convocation, the purpose is to indicate what we might do over the future. In order to set this in the right perspective, we have to go over some broad aspects relevant to science and technology, development, education and value systems.

India attained Independence soon after the Second World War. Since then large parts of the world have freed themselves from the colonial yoke. The question of developing these newly free but largely underdeveloped parts of the world has been one which has engaged attention, over the past three decades.

Amongst the earliest theories of development was one which prescribed massive capital transfers from the advanced countries to the developing countries. This, of course, worked wonders in countries like Japan and the Federal Republic of Germany which had suffered massive destruction during the Second World War. Appropriate inputs of capital from outside, and the absence of any need for allocation of internal resources for defence purposes, made possible the reconstruction programmes of these countries. However, the important point to be kept in mind here is that the base for development already existed in these countries in the form of an educated population with a background of industrial competence, etc. All that was needed was to provide them with the wherewithal to put their existing (and not purely potential) capabilities to use. In certain other countries with small but educated and skilled populations, large per

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economist J.K. Galbraith, who was the U.S. Ambassador to India, has remarked: "The real accomplishment of modern science and technology consists in taking ordinary men, informing them narrowly and deeply, and then, through appropriate organisation, arranging to have their knowledge combined with that of other specialised, but equally ordinary men. This dispenses with the need for genius. The resulting performance though less inspiring, is far more predictable." Jose Ortega Y. Gasset said it somewhat more irreverently "Contemporary science, with its systems and methods, can put blockheads (*tontos*) to good use." To a certain extent, it seems to me that we in India are trying to organise science and technology in this manner for social benefits, though as yet we

from their purely scientific creativity.

One could, however, go outside science, and look at the spirit of that period: and the class of men and women generated in all walks of life: in the arts, in politics, social work and so on. India of that period was a resurgent India, awakening to the call of freedom, searching for a new identity, and motivating all concerned to bring out the best from within themselves. There was a tangible challenge of the freedom struggle and a spirit of nationalism. S.N. Bose has remarked: "We wanted to put scientific knowledge to use through technology for the benefit of the people, or to contribute to science by intensive study." Society was thus permeated with a sense of nobility and achievement; and had an elan about it. Solutions were being looked for

capita inputs from outside were also feasible and effective. For a country of the magnitude of India this certainly could not be the main approach to development. It might also be emphasized that large countries like the Soviet Union and the Peoples Republic of China have based their development on their internal resources rather than massive inputs from outside. Philosophically, one may also ask whether development, which constitutes an achievement for a community, can be accomplished without an element of pain or effort from within; whether one can accomplish this without thrift and capital formation through savings. Concepts characteristic of most religions, on the need for self effort for self realization are often looked at as being applicable to individuals; but appear equally relevant to nations and society as a whole, which is built up of individuals.

Another theory which found great favour was that though the developed countries in the world had not succeeded in abolishing poverty completely, they still had attained considerable overall prosperity, through a systematic pursuit of industrial productivity and economic growth based on science and technology. This could then be regarded as a model for development; and the science and technology which contributed to their development, was already available in the world "super market" to be acquired. This theory has resulted in great stress being laid on "transfer of technology from advanced countries to developing countries"; and the arguments relating to this have become highly politicized.

It is certainly true that there is a vast accumulation of science and technology in the world and it is not necessary to repeat the laborious and costly process of developing all of this ab initio. Developing countries should take full advantage of the availability of this resource. But what is important to understand is that technology which is to lead to meaningful economic and social development has to be appropriate to the environment in which it is being applied. This implies

that the country which wishes to make use of the imported technology has already built up structures capable of assessing what is available, selecting that which is appropriate, absorbing that which is received and be capable of transforming it for its future needs. This implies the creation of an adequate indigenous base of science and technology.

Many technologies in industrialised countries have usually been devised in terms of the creation of new demands which are quite unnecessary for most developing countries or of increasing manpower productivity, and is both capital and energy intensive. In most developing countries, the creation of employment is a dominant goal, and too much capital-intensive industry is not necessarily to be welcomed. For example, the choice between a technology involving 50,000 rupees for each person employed, compared to another at 2,500 rupees per person employed may in reality be a choice between half a million jobs of high economic yield or 10 million jobs with a lower per capita income. The technology with lower capital investment and higher employment potential is clearly one a country such as ours should go in for. The choice is, however, not quite so simple. Many other consequences of the cheaper technology will have to be evaluated—some of which may rule it out or make it unattractive. Even where technology has been successfully transferred to a developing country, it has often resulted in benefits being reaped mainly by a small, privileged minority, whilst the masses, living close to subsistence level, have been largely untouched.

The real need, therefore, is for the establishment of an indigenous science and technology community fully in tune with the environment, which can play its role concerning issues of this nature. Homi Bhabha emphasized this when he remarked in 1966: "the problem of establishing science as a live and vital force in society is an inseparable part of the problem of transforming an indus-

trially underdeveloped to a developed country."

The United Nations has organised through the 1970's a series of international conferences on very important themes of global significance such as environment, population, food, water, habitat, desertification and so on. Policy makers in the world are becoming much more aware of the global significance of these issues. It is becoming increasingly clear that mankind can no longer exist in self-contained communities, such as nations, with relatively simple trade relationships which are an extension of the barter systems of ancient days. In earlier periods society functioned in the form of tribes, city states, or small countries with relatively small populations and small demands, which could largely be met by the resources in the vicinity. Today, we are dealing with an already very large world population, of a little over 4,000 million people, distributed over a very large number of countries of highly varying sizes, population densities and availability of natural resources. From being a relatively small entity on a vast earth with infinite resources, mankind has become a very large entity, getting to the point where the earth can no longer be regarded as infinite, particularly with the standards of living attained in the advanced countries and human expectations elsewhere arising by sheer comparison. It is clear that one has to learn to cooperate on a fundamentally new basis, with a clear recognition of the interdependence brought about through increases in population and advances in science and technology. Many old concepts relating to trade and commerce, or property rights, of financial equivalence of natural resources will need to be altered in the new context. And the very large disparities that exist cannot continue or grow. The United Nations has called for a New International Economic Order; alongwith it there would be need to have, within the countries themselves, a new internal economic order. These are objectives for reducing disparities between nations and, at the same time,

within nations; and new pathways of development to accomplish this will have to be found. In this connection, a major UN Conference on Science and Technology for Development has been planned towards late 1979, where many of these issues will be discussed, from the viewpoint of the role science and technology has to play in such a process. There was, in 1968, a UN Conference on Science and Technology for the Benefit of the Less Developed Areas. At that Conference, the main objective was to display the achievements of science and technology and its capabilities, and what was available in the world "super market" for acquisition, particularly by the developing countries of the world. The 1979 Conference will be quite different, in the sense that it will attempt to relate science and technology to the development process itself, and to the objective of a New International Economic Order. In the 16 years between these two conferences there has been a much deeper appreciation of the fact that science and technology by itself does not lead to development but it represents a powerful means, when appropriately coupled to the remaining socio-economic and political framework, for an appropriate form of development which is equitable, and preserves the quality of life.

The need to have an indigenous base of science and technology has been well recognised in India, though not to the same extent in a large part of the developing world; where still the obsession with technology transfer as such prevails. The 1979 Conference will have achieved a major success if it could bring home the primary need for indigenous capability in science and technology in the various countries in the world to achieve these objectives.

Even where the awareness exists of the need for an indigenous scientific and technological capacity, to ensure that import of technology takes root and spreads, there is little appreciation that the research and development system must be organically implanted in the national fabric and not left in an autonomous and isolated

situation. In India, the science and technology base which has been grown, and which is very sizeable, has not as yet been intimately coupled with the various sectoral developments; in the sense of playing a role in aspects of decision making and implementation. It may even be questioned whether a large part of the science and technology base which has been created is appropriate and capable of being so coupled.

The science and technology base has essentially been built up through the university system; and some of the major aspects of the application of science and technology to development are being implemented through large research institutes. The extent to which these research institutes can be spearhead of innovation and for implementation of developmental activities depends critically on how they are related or unrelated to the total development situation.

The universities of our country today perform an omnibus function. First, as a result of the coupling between the university degrees and employment opportunities, there has been tremendous pressure to open new universities, as well as to increase the intake of individual universities. And, both these aspects have resulted in unmanageable situations, in the absence of the possibility of providing the appropriate infrastructure (of buildings, staff, equipment and so on). A very large part of the university function today is to provide training in skills of a professional nature (in the fields of engineering, medicine, law and the like) that are necessary for employment. As a result, the functions of the university defined by Sir Ashutosh Mukherjee in the 1922 convocation of this University, namely: "the University is thus the instrument of the State for the conservation of knowledge, for the discovery of knowledge, for the distribution of knowledge, for the application of knowledge, and above all, for the creation of knowledge-makers" get sadly neglected. Universities have been converted to educational factories

rather than being institutions for learning and scholarship. Universities today are so busy with the enormous range of their tasks, and the volume of throughput that they have to handle, that they can no longer function as the long range, independent and objective 'think tanks' of the country.

Education today has been reduced to the mere process of handing over knowledge, with a stress on learning by rote, and on factual information. Instead, it should be a process which enables the human mind to think and to reason. There are many in our country who are educated because they can think and reason, even though they might be illiterate. For centuries now the written word has played a very important role in education. With advances in science and technology, with radio and television, new horizons for education have opened up, and we should learn to make full use of these for stepping up the pace of development.

The whole process of education should be built around an exposition of the environment around the student, so that he or she gains familiarity with problems in the immediate vicinity, and the manner in which one might look for a solution based on an understanding of nature and its laws and making full use of existing human knowledge. A person so educated, even if not a research worker, is better fitted for finding for himself, and for gainful and creative self-employment. There are many new problems which will turn up when one questioningly looks at one's environment which will pose great challenges for science and technology to excite any intellectual. Some of these will call for completely new knowledge for their solution; while others will demand the application of existing knowledge—but on the basis of highly creative and innovative efforts, very often demanding interdisciplinary approaches, with additional socio-political dimensions. Many problems that are encountered in the areas of development will not relate to narrow disciplines of mathematics, physics,

chemistry, geology, biology, economics and so on, but a combination of several physical, biological and social sciences. There are great opportunities ahead in a country like India to blaze new trails in this which could be of value to other developing parts of the world.

Value systems are an inherent part of any society; and define the way it functions and also define the expectations that man has in life. These value systems are subject to change, particularly on the basis of what is seen around. Advances in science and technology in the fields of communication and transportation have made the world a small place. Ways of life of human communities all over the world are very rapidly getting known to other parts; as a result human expectations the world over are being geared to what is characteristic of the most affluent part of the world. There is nothing fundamentally wrong in this, except that all of what has occurred in these affluent parts, which relate to highly materialistic, consumer-oriented societies, cannot, for reasons of economics and availability of resources, become possible in the rest of the developing world. And, even if it were possible, it would not be desirable, from the viewpoint of environmental degradation, resource depletion and the like that

it leads to. New value systems which correspond to meaningful development have to be worked out and become a way of life. What we need badly in the world is a Mahatma Gandhi with his quiet insistence on the power of the human spirit and attaining happiness whilst limiting one's needs.

It is sad to think that out of the 4,000 million people in the world today, 570 million are below suggested nutrition levels, 800 million adults are illiterate, 1,080 million have little or no housing and 1,500 million have no access to effective medical care. This is in tragic contrast with the achievements of science and technology at the very frontiers of space science, molecular biology, electronics and so on. It surely should be possible to bring to bear on these problems the enormous powers of science and technology. What is missing is the identification of the problems in a way in which the scientific method can be used to look for solutions; and the canalization of human effort towards such solutions which demands a high degree of social activism.

[Excerpts from the convocation address delivered by Prof. M.G.K. Menon, Chairman, Electronics Commission, at the University of Calcutta.]

Colombo Meet commends adult education programme

Smt. Renuka Devi Barkataki, Union Minister of State for Education & Social Welfare who attended the UNESCO sponsored Regional Conference of Education Ministers in Colombo said on her return that our massive adult education programme was highly commended at the conference.

The conference noted that considerable progress had been made in the field of education since the last conference held at Singapore in 1971 but at the same time educational disparities had also widened. It considered essential that education should be closely

linked to life and to the world of work and should impart to young people the attitudes and skills which would prepare them for their role as producers, citizens and participants in the development of the community.

The conference appealed to the international community to have recourse to new forms of co-operation based on the concept of a new and more equitable economic order and help member states of the region in their efforts to develop their education system.

A declaration adopted at the conference said that high priority

should be given to the education of girls and women on the basis of equality with men to enable them to achieve self-fulfilment as well as to make them fully aware of and prepare them for their role in social life and national development.

The conference was attended by Education Ministers and senior officials from twenty-five member countries representing 61 per cent of the world's population.

Implementation of adult education programme

The government officials and non-official workers met recently in New Delhi to consider the various issues involved in implementation of the National Adult Education Programme (NAEP). The conference discussed in depth the following major subjects:

— the ways in which NAEP could be linked to various developmental programmes like integrated rural development, tribal development, labour welfare and health and family welfare.

— the coordination system to be built up for the programme—especially at the district, block and village levels.

— how to provide the administrative apparatus at the district, block, tehsil, thana and village levels and the necessary orientation so that it could respond in a constructive manner to the demands made on it as a result of the new awareness of rights and responsibilities, of government policies, among women and the poorest sections of the society.

Most of the participants felt that NAEP would be the right way to involve the people in the development process.

The conference recommended that similar meetings of collectors and other officials involved should be held at the State and regional levels to orient all the collectors in the objectives and importance of NAEP.

The conference was attended by collectors from State and Union Territories and heads of state development departments. The representatives from the Ministries of Agriculture and Rural Development, Health & Family Welfare and Labour also participated in the conference.

Need for students participation in national development

Dr. Atma Ram, Chairman of the National Committee on Research and Technology in his inaugural address to the seminar on 'transport phenomenon' stressed the need for students involvement in the mainstream of development through their respective institutions in the country.

Dr. Atma Ram said the concept of conferring degrees on students should be changed to the need of the hour through technological research and development. Degrees could be given to those who produce better results in the field of research, theory and practical knowledge and work for national development. There should be a sense of involvement among the students so that they

more and exported 30 times more than India. Dr. Atma Ram urged that we have to catch up with time and if we fail to do so, people will not pardon us.

He added no nation was independent technologically. America spent a lot to get knowledge from others. Japan acquired 90 per cent of its technology from outside. He thought the time was coming when none would agree to lend or sell its own technological knowledge.

Dr. Hari Narain, Vice-Chancellor of Banaras Hindu University in his presidential address desired a national debate and a clear policy on the question of students involvement in universities.

The three day seminar on

the courses on office administration, accounting and finance, management and sales.

Dr Adiseshiah said that draft statutes for working of the Advisory Council will be approved by the Syndicate and the Senate in October. The proposal will make the Advisory Council a permanent statutory body of the university. The council would be responsible for running employment oriented courses. It would also provide feedback to the university with regard to its academic programmes in cooperation with other bodies engaged in reforming such programmes.

Dr Adiseshiah added that the University Grants Commission was of the firm opinion that there should be no professional orientation at the undergraduate level. The University Grants Commission had advised them not to start the communication course at the undergraduate level but to limit it to the postgraduate stage. He said that the university authorities were thinking to restructure the academic programmes of B.A., B.Sc., and B. Com in the light of introduction of new pattern of education.

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get little time to create tension in universities.

He felt orientation of teaching was also essential for advancement of the country technologically competing with other nations of the world. The gap between the basic research and applied research should be reduced.

After independence technical research and development at educational institutions had been neglected. Standards in universities had fallen. This slip had to be corrected. The students, from the days of education should become aware of problems of the nation and teachings at all levels should be oriented accordingly. Economic strength was not by invention alone but by its degree of competence, and quality in the market of the world. He cited example of Korea, a small nation, which produced goods four times

'transport phenomenon' was organised by the Chemical, Engineering and Technology Department of Banaras Hindu University. Seventy delegates participated in the seminar.

The seminar was the first of its kind in the country and was organised to fulfil the long felt need for bringing together the researchers from various disciplines to discuss their problems and pool together their knowledge.

Madras Varsity proposes new professional courses

The Advisory Council on Trade and Industry of the Madras University at its recent meeting headed by Dr Malcolm S. Adiseshiah approved the introduction of four new courses on taxation, new projects, effective communication and media planning. The Council recommended to repeat

Objective assessment of teachers

Dr Hari Narain, Vice-Chancellor of Banaras Hindu University in a circular letter addressed to the teachers of the university has stressed the need for devising a system for objective assessment of their work so that recognition of their merit did not entirely depend on the number of published papers.

He has made several suggestions seeking to improve the efficiency while working within the limitation of the University Acts and Statutes and desired that the decision making responsibilities, financial and administrative powers be decentralised as early as possible.

He would like the student problems to be dealt within the departments and faculties as far as possible. Dr Hari Narain said the examination system provided the bedrock on which the progressively developing edifice of the university's sanctity and

success depended and therefore all necessary measures should be taken to ensure strict invigilation and fair examinations.

The Vice-Chancellor also suggested that each department should also make a serious analysis of the strength and weaknesses of basic and applied research and felt, that where applied research programmes were chosen, the question of relevance to the needs of the region and the country be kept in mind.

Priority for energy research programme

The Prime Minister, Mr. Morarji Desai said that the Government had given high priority to utilisation of solar energy for a wide range of applications with special emphasis on its use in rural areas. He added that efforts in this area were in the research and development stage.

The Prime Minister listed the following projects which had made significant progress—successful completion of one-tonne a day proto-type paddy dryer by the Annamalai University, a ten-tonne a day paddy dryer installed by the National Industrial Development Corporation at the Central State Farm in Lathowal near Ludhiana and a 10 kw experimental solar power plant commissioned by the BHEL in cooperation with the IIT Madras.

There were four other projects which included a solar energised desalination pilot plant of 1000 litre capacity for obtaining potable water from sea water developed by the Central Salt and Marine Chemical Research Institute at Bhavnagar.

Mr. Desai informed that the Department of Science and Technology had sponsored a time bound research programme on bio-gas technology and its utilisation.

The Prime Minister said the Department of Physics, University of Lucknow had assembled an appropriate flow-line for the gas and worked out the details of designing the gas holder. He added the Indian Institute of Management, Ahmedabad had completed the socio-economic

evaluation of different types of bio-gas plants and their acceptability region-wise in the country.

Plan for Vidyasagar university in Midnapore

The West Bengal Minister for Higher Education, Prof. Sambhu Ghosh said that the University Grants Commission had approved the setting up of the Vidyasagar University in Midnapore district. The Minister added that the curriculum at the graduate and post-graduate levels in the proposed university will be totally different from the syllabus prescribed by the traditional universities.

The curriculum will take into account the rural problems and the needs of the villages so that the new entrants could be employed locally. Prof. Ghosh said a team of experts drawn from the various facilities of IIT, Kharagpur has been assigned the job of preparing the syllabus.

The Minister was confident that the proposed university would not be like other universities in the State which have turned into general universities in the later years.

Prof. Ghosh said that colleges of the Midnapore district will be affiliated to the Vidyasagar University. He added that the degrees awarded by the new university will bear different nomenclature than M.A., M.Sc. etc. He expressed the hope that the colleges in the district would be tuned to make the students mentally prepared to accept the new syllabus with enthusiasm.

The Minister thought the graduates of the new university will take up the rural problems themselves which will ultimately generate self-employment spirit.

ISM to organise seminar on Deep Mining

With the exhaustion of minerals at shallower depths, exploitation of minerals at greater depths is being gradually introduced both in coal and non-coal mining sectors. Some of our mines are already very deep even by world standards, and present numerous problems. To give an opportunity to have an indepth discussion of the problems associated with deep mining, the Indian School of Mines

will organise a week long seminar on 'Problems of Deep Mining' from September 4-9.

The contents of the seminar inter alia will cover the following areas:

1. Opening and construction of deep mines including design of shaft lining and insets etc.
2. Design of mine openings and excavations—rock mechanical aspects.
3. Design of mining methods in rock burst prone and coal seams.
4. Problems of ground control in deep mines and their solutions.
5. Ventilation system of (a) deep coal mines (b) deep non-coal mines including air-conditioning.
6. Problems of drainage and its solution.
7. Design of winding systems.

The programme will consist of lectures, case-studies and discussions. Major part of the course will be devoted to discussion.

The faculty will include ISM professors, guest lecturers from Bharat Gold Mines Ltd, Hindustan Copper Limited, Hindustan Zinc Ltd. and Bureau of Public Enterprises.

The nominations alongwith the fee should reach Prof. Vijay P. Singh, Professor of Continuing Education in the ISM by 26th August, 1978.

Anna University of Technology for Tamil Nadu

The President has given his assent to the establishment of Perarignar Anna University of Science and Technology in Tamil Nadu for fostering the growth and development of higher education and research in engineering, technology and allied sciences.

The university will provide facilities and opportunities for higher education and research in engineering, technology and allied sciences, devise and organise relevant programmes; foster co-operation and exchange of ideas between academic and research community and industry and promote the spirit of entrepreneur-

ship and professional dedication among the students.

The Madras Institute of Technology at Chromepet will be brought under the proposed university.

The university will include the four existing departments of Madras University—departments of chemical technology, leather technology, textile technology and school of agriculture and town planning. These departments are located in the Alagappa Chettiar College of Technology which will form part of the new university.

The university will be of unitary type. The College of Engineering, Guindy which is a premier educational institution in the State and which has all the branches needed to be developed into a technological university, will be the principal seat of the proposed university.

Summer institute in English

Dr. H.K. Baruah, Vice-Chancellor of Gauhati University in his valedictory address to the All India Specialised Summer Institute in English held in Shillong stressed the need of attaining a high standard of perfection by the teachers of English language in the country. He emphasised the need for similar institutes in the region for orientation of the teaching community. He thanked the Central Institute of English and Foreign Languages for having organised the summer institute for the teachers.

Dr. G. P. Thakur, Director of the Summer Institute thanked Dr. C.D.S. Devanesan who had completed his term of Vice-Chancellor of the North Eastern Hill University for his constant patronage to the Regional Centre of the Institute. He expressed the hope that after going back to their places of work, the participants would make a full use of their experiences at the Institute.

One of the highlights of the Summer Institute was the extension lectures on topics relating to the study of language and literature.

Dr. Devanesan expressed the

hope that the Summer Institute will bring about a blend of scientific and humanistic attitudes as both the sciences and humanities are essential in the development of a complete human being.

The Summer Institute was sponsored by the University Grants Commission and was organised by the Central Institute of English and Foreign Languages at North Eastern Hill University.

Modular courses at TTTIs

Modular courses in education technology, industrial training, teaching-learning practices and educational management have been introduced from this year in the Technical Teachers' Training Institutes in the country.

The teachers are free to choose any modular according to their training needs and each course is of three months' duration. For earning a diploma a teacher trainee has to complete three modular courses. The Institution in Madras which imparts in-service training to polytechnic teachers had also been conducting a large number of short-term courses. The Principal of the Institute in Madras, Prof. Subha Rao said that a new department of educational management was likely to be created soon with the collaboration of experts from the United Kingdom. He added financial aid from the United Nations Development Programme was being sought for the supply of special television sets to screen video tapes to all the polytechnics in the southern region in the country. The Principal said the duration of the diploma in Technical Teaching course had been reduced from one and a half-years to one year without sacrificing the content.

Agricultural varsity for Himachal

The Himachal Pradesh Chief Minister, Mr. Shanta Kumar said that the Union Government, University Grants Commission and the Indian Council of Agricultural Research had accepted the proposal of the State Government

for setting up a separate agricultural university in the state.

The Chief Minister said this would go a long way in boosting agriculture, horticulture, forestry, animal husbandry and allied vocations besides ensuring optimum use of hill land for productive purposes.

Jnanpith award for Karanth

Kannada novelist Dr A. Shivarاما Karanth has been selected for the Bharatiya Janapath Literary award for 1977 for his novel 'Mukajjiya Kanasugalu'. The award winning novel has been adjudged the best creative Indian literary work of the period.

The selection was made by the Award Selection Board headed by Dr. V. K. Gokak.

Dr. Karanth who gets the Jnanpith award is the third Kannada writer to receive it after Mr. K. V. Puttappa and Dr D. R. Bendre.

Dr. Karanth won the Sahitya Akademi award for his 'Yakshagana Bayalata' in 1958, the Swedish Akademi folkdances award in 1960 and the Padma-bhushan in 1968.

Tamil course in Kurukshetra

Kurukshetra University has introduced certificate course in Tamil from the current academic session.

A grant of Rs 15,000 has been received by the university from the Tamil Nadu Government. It is proposed to hold the classes in the evenings.

SNIPES to fix priorities in sports

The Society for the National Institutes of Physical Education and Sports at its recent meeting held in New Delhi under the chairmanship of Dr Amrik Singh, Vice-Chancellor, Punjabi University, decided to set up an eastern wing of the National Institute of Sports at Calcutta. Dr Amrik Singh said that the Society had taken a decision for fixing priorities for various sports and games in the country so that emphasis could be laid on high-

performance disciplines. He added it will be the endeavour of the SNIPES to have a rational approach to Indian sports and put the sports set-up of the country in a pragmatic and phased manner. He pointed out that the objective would be to lay emphasis on games which can make a mark and at the same time provide facilities to other leisure-time sports.

The SNIPES approved in principle the introduction of four more olympic disciplines at the NIS, Patiala. The meeting decided to provide free boarding and lodging facilities for sportsmen attending the regular and condensed courses. This facility is at present available only to Arjuna Award winners and participants of international championships.

The Society decided to organise all-India sports competitions under three different groups. It also decided to hold the fourth National Sports Festival for women at Calcutta in November this year.

Seminar on NCC

A seminar to discuss the problems facing the National Cadet Corps in Bihar is being organised in Patna by the Directorate General of NCC.

The Governor of Bihar, Mr Jagannath Kaushal will inaugurate the seminar.

Brigadier Mohinder Singh, State NCC Director said that fifteen speakers including guardians of cadets, eminent public men and heads of educational institutions would participate in the discussions. He said that total strength of NCC in Bihar now was over 59,000. NCC training was being given at one hundred fifty five colleges in the State. Every district headquarter as well as some of the rural areas were covered under the scheme. Shortage of lady officers was one of the main problems facing the NCC in the State.

The NCC during the past few years has built over 89 km of traction roads in the rural areas of the State and the entire job of manual labour had been done by its cadets. The NCC has adopted a few villages for social service.

The Director said a lot of other good work for the community had also been done in the State.

Brigadier Singh said that in the coming months the NCC was planning to adopt more villages for social service.

Bibliography of Tamil classics

The five-member expert committee headed by Shri Justice S. Maharajan set up by the Tamil Nadu Government to translate Tamil classics and valuable books into Indian and foreign languages and also rare books of other languages into Tamil, has definite plan to bring out the first annotated bibliography on Tamil classics on October 2 this year.

Shri Maharajan said in Madras that it was for the first time that such a Committee has been set up by the Government. He added a research scholar had been deputed to the National Library in Calcutta where twenty five thousand volumes in Tamil were available. He hoped the panel would soon select the foreign books for translation into Tamil as also the Tamil books that should be rendered into other languages. The members of the panel would also choose the translators. The Committee has already recommended certain norms for payment to translators.

Mr Maharajan said about 2,450 titles from foreign languages have been translated into Tamil and translations of 287 rare books in Tamil are available in foreign languages.

Mr Maharajan added that foreign scholars were touched by the greatness of Tamil language and the ideas found in its literature. He pointed out the work undertaken by the panel would be of great help to the younger generation. The main object of the Committee was to modernise all Tamilians and develop a wider outlook in them.

Stress on content of education

The Education Minister, Dr P. C. Chunder said that the draft statement on national education policy will lay greater emphasis on the content of educa-

tion rather than its format and structure.

The content of education is proposed to be changed considerably to make it socially more useful and production-oriented.

The Minister told the State Education Ministers' conference that it would consider the structure of formal education in the country. It took note of the fact that twenty-six states and union territories had already introduced the ten plus two plus three structure as recommended by the Education Commission and the National Policy on Education.

The conference, he said, considered the states obligation in regard to elementary education and was of the opinion that this structure did not run counter to the Directive Principles of the Constitution so long as the obligation to provide free education up to the age of fourteen was recognised and accepted.

He said there was a consensus in the conference that school education should comprise elementary, secondary, and higher secondary stages of twelve years duration. The undergraduate stage of higher education may be of three years. However where a State Government so desired, it could have a two years pass and three years honours course.

Dr Chunder said the replies from all the states on the questionnaire for the national education policy had not have been received.

The Minister said the State Governments were taking steps to implement the 10 plus 2 pattern in urban and rural areas.

The Minister agreed that there were economic and physical difficulties in the implementation of the programme but steps were being taken to overcome them.

Education for rural uplift

The State Council of Educational Research and Training of Tamil Nadu has launched a package plan for 'Rural development through Education' to bring about a qualitative improvement of teachers, helping the drop-outs to acquire skills in craft oriented education and promoting education related to the actual needs of

people. The programme will enable the villagers to work for the betterment of their community.

The special team of UNESCO experts from South East Asia commended the scheme and has described it as a model for other countries in Asian region. The UNESCO report said quite a number of work experience activities were being undertaken by the villagers and the pupils. The team observed two important points of linkage between formal and non-formal education of learning—craft-based learning, which would give the children an opportunity to earn as they learn and adult literacy through teaching of craft where the experience of the package plan would be very helpful.

In their final analysis the team found that the main focus of the programme was to enable the community to utilise the local resources, as it provided economic activities enabling the villagers to stay and work in their own communities. They observed that the package plan had been carefully planned.

The team appreciated the idea generated by the SCERT for making education the vehicle of rural development.

The Director of the SCERT, Mr. K. Venkatasubramanian said the study report of the UNESCO would be circulated to all leading educational bodies in the world.

Workers' education in villages

The Minister for Labour and Parliamentary Affairs, Dr Ram Kripal Sinha, said Government is revamping the functioning of the Workers Education Board to extend for the first time its services to the rural and unorganised sector.

Hitherto the board had functioned mainly in the urban areas and among the organised section of the labour.

Dr Sinha said the Workers Education Board, the only Central organisation for adult education and training, would supplement the massive adult education programme to be started on October 2, the Gandhi Jayanti Day.

Dr Sinha thought existing adult education boards functioning under State Governments would get an added thrust when the Workers Education Board's function was revamped.

Dr Sinha added Government proposed to open a workers education centre in Ranchi. Forty such centres were already functioning all over the country.

Dr Sinha informed, his Ministry was identifying the unskilled labourers in collieries, fisheries, plantations and other industries, who would be brought under the adult education programme.

Role of regional languages stressed

Dr P.C. Chunder, Union Education Minister, while laying the foundation stone of the building of the Assam State Text-Book Production and Public Corporation in Gauhati said the regional languages should preferably be the medium of instruction upto the university level so that the students could properly follow the course and achieve the objective.

The Union Minister said the Centre had sanctioned rupees one crore to every state for production of text-books in regional languages for school and college students. He assured the additional money would be allocated to the states for this purpose. He stressed the need for radical change in the entire educational system of the country. He thought education should be need based so that the students could benefit from their studies and translate it in practical life. Dr Chunder suggested it should be the endeavour of the text book producers and distributors to supply text books to the students at a cheaper price.

Dr Chunder reiterated primary and secondary education should be imparted to students in their mother tongue and higher education through regional languages. This would not be disadvantageous as the students would still be learning English under the three-language formula.

He emphasised the need for reduction of syllabus and said the

drop-outs in schools and at university level were the result of heavy course which the students often fail to follow. He added the books should be written in simple language so that the students could follow them easily.

Assam Chief Minister, Mr G. Borbora, suggested the Text-Book Production and Public Corporation should produce the quality books in regional languages at a cheaper price for the benefit of the students.

New rules for Arjuna Award

The All India Council of Sports at its recent meeting held in New Delhi adopted the new rules for Arjuna Award. The recipients of the awards will now be entitled to a cash scholarship of Rs 200 p.m. for two years in addition to bronze Arjuna Statuette and a scroll. The recipients shall also have the privilege to watch any National or International Sports event held in the country without any ticket or charge from this year.

Seminar on NSS programming

Dr Malcolm S. Adiseshiah, while presiding over the seminar of programme officers of the National Service Scheme organised by the Madras University said that such programmes enabled the university to have a close rapport with the public. He said that out of the one hundred twenty seven colleges in the State, only ten still remained to adopt the NSS. He hoped these colleges would also adopt the programme soon.

The State Education Secretary, Mr C.G. Rangabashyam in his inaugural address said NSS afforded students an opportunity to face the realities of the environment and acquaint themselves with the problems of people in villages. He said that efforts should be made to make the scheme interesting and challenging.

About two hundred programme officers from various colleges which have adopted NSS as part of the curriculum participated in the seminar.

Commonwealth Universities meet in Canada

About fifty Vice-Chancellors and academics from Indian universities will participate in the forthcoming Twelfth Commonwealth Universities Congress to be held at the University of British Columbia, Canada from 15th August to 27th August, 1978. The Congress will be immediately preceded by the conference of executive heads of the Commonwealth Universities which will take place at the University of Western Ontario (London) Ontario. The Council of the Association of the Commonwealth Universities will hold its meeting in Quebec.

The discussions in the Congress would be broadly on the following themes. (i) The world food problem and the universities; (ii) Higher Education in countries with federal system of government; (iii) Reconciling equality and excellence; (iv) The public view of the universities; (v) Universities and other institutions of tertiary education. The focus of discussion would however be on 'Reconciling national, international and local roles of universities with the essential character of a university'.

The following members will participate in the Congress: Dr. A.M. Khusro, Prof. Mohammad Shafi (Aligarh); Shri M.R. Apparow, Prof. K.V. Sivayya (Andhra); Dr. S. Chandrasekhar (Annamalai); Dr. S.S. Saluja, Dr. T.R. Anantharaman (BHU); Dr. T. Ratho (Berhampur); Shri M.A.M. Gilani (Bhagalpur); Dr. C.R. Mitra (BITS); Prof. Ram Joshi (Bombay); Dr. Ramaranjan Mukherji, Dr. D.K. Chaudhuri (Burdwan); Dr. S.K. Mukherji (Calcutta); Dr. R.C. Mehrotra (Delhi); Shri Bishan Singh Samundri (Guru Nanak Dev); Dr. N.M. Swani (IIT/Delhi); Dr. A.N. Bose (Jadavpur); Dr. S.C. Dube (Jammu); Dr. B.D. Nag Chaudhuri, Prof. K.J. Mahale (JNU); Dr. V.K. Sukumaran Nayar (Kerala); Dr. Vikas

Mishra (Kurukshetra); Dr. V.C. Kulandaiswami (Madurai); Dr. D.V. Urs, Dr. M.N. Viswanathaiah (Mysore); Dr. G. Ram Reddy, Dr. Bh. Krishnamurthy (Osmania); Dr. R.C. Paul (Panjab); Dr. A.K. Dhan (NEHU); Dr. T.B. Mukherjee, Prof. V.A. Narayan (Patna); Dr. Amrik Singh, Dr. B.S. Sood (Punjabi); Dr. K.S. Murty, Dr. M.J. Kesava Murty (Sri Venkateswara); Dr. Madhuri R. Shah, Mrs. K.P. Hazarat (SNDT); Dr. G. Rangaswami (TNAU); Dr. Bidyedhar Mishra (Utkal); Dr. P.N. Kawthekar (Vikram); Dr. S.C. Sinha (Visva Bharati); Prof. P.D. Hajela (Allahabad); Dr. N.A. Noor Muhammad (Calicut); Prof. Shankar Lal (IIT/Kharagpur);

Prof R.G. Narayanamurthy (IIT/Madras); Prof. S.S. Wodeyar (Karnatak); Shri Hardwari Lal (MDU, Rohtak); and Shri M.S. Ramamurthy (Secretary, AIU).

'Experience India' festival

The College of Vocational Studies of Delhi University in collaboration with the Youth Hostels Association of India and Air-India have sponsored a unique five-day programme "Experience India-1978" aimed at bringing East and West closer. The festival will enable about two hundred foreign youths hailing from the countries of Eastern and Western hemispheres to experience Indian life and way of living.

Union Labour Minister, Shri Ravindra Verma will inaugurate festival in the capital in the third week of August and Civil Aviation and Tourism Minister, Shri P.L. Kaushik will deliver the keynote address.

VIKRAM UNIVERSITY, UJJAIN

No. Dev/78/Estt/Advt/1/2554

Dated: 7.8.1978

Advertisement

Applications, on the prescribed forms available from the University Office on payment of Rs. 5 in cash or by M.O./I.P.O. payable to the Registrar, are invited for the following posts in the University Schools of Studies and Department of Library Science.

S.No.	Department	Number of Posts			
		Prof.	Reader	Lect.	Research Fellow
1.	Physics	1	—	2	—
2.	Mathematics	—	—	*1	—
3.	Statistics	—	—	1	—
4.	Chemistry	—	1	*2	—
5.	Geology	—	1	1	—
6.	Botany	—	—	2	—
7.	Zoology	*1	*2	1	—
8.	Hindi	—	—	2	—
9.	Sanskrit	—	—	1	—
10.	English	—	1	—	—
11.	Library Science	—	—	1	—
12.	Economics	1	—	—	—
13.	Pol. Science	—	—	1	—
14.	Ancient Indian History, Culture & Archaeology.	—	—	—	1
Total:		3	5	15	1

- *Note (1) The post of Professor and one post of Reader in Zoology are temporary for the present and tenable upto 23.10.79 and 12.11.78 respectively but are likely to continue.
- (2) One post of Lecturer each in Mathematics and Chemistry are temporary for the present and tenable upto 18.11.78 and 18.5.79 respectively but are likely to continue. Another one post of Lecturer in Chemistry is purely temporary.

(2) Pay Scales

- (i) Professor—Rs. 1300-50-1500-75-1800-100-2000.
- (ii) Reader—Rs. 1100-50-1600.
- (iii) Lecturers—(i) Rs. 620-40-900-50-1400.
(ii) Rs. 620-40-900-50-1050-EB-50-1300. (For Department of Library Science)
- (iv) Research Fellow—Rs. 300-25-600. (Unrevised scale)

(3) Qualifications

(i) Research Fellow

- (a) Atleast a Second Class Master's Degree of an Indian University or an equivalent qualification of a foreign university in the subject concerned.
- (b) Knowledge of Hindi will be desirable.

(ii) Lecturers

- (A) (a) (i) A Doctor's Degree or published research work of an equivalent high standard, and
- (b) (i) A Second Class Master's Degree in a relevant subject with at least 50% marks (B in the seven point scale) or an equivalent degree of a foreign university; and
N.B.: (While taking into account the marks/grade, the marks/grade obtained in internal assesment, if any, shall be excluded).
- (ii) Atleast 50% marks at the Bachelor's Degree Examination on the basis of which division is awarded at the Degree level by the university; and
- (iii) Atleast 50% marks at the Higher Secondary/Intermediate/Pre-University Examination, as the case may be.

Having regard to the need for developing interdisciplinary programmes, the Degrees in (a) & (b) (i) above may be in relevant subjects.

Provided that if the Selection Committee is of the view that the research work of a candidate, as evident either from his thesis or from his published work, is of very high standard, it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's Degree or equivalent research work is not available or is not considered suitable, a person possessing the following qualifications may be recruited:

- (B) (i) A Second Class Master's Degree in a relevant subject with atleast 50% marks (B in the seven point scale) and
N.B.: (While taking into account the marks/grade, the marks/grade obtained in internal assessment, if any, shall be excluded).
- (ii) Two year's experience of research work or practical experience in research laboratory/research organisation;
- (iii) Atleast 50% marks at the Bachelor's Degree Examination on the basis of which division is awarded at the degree level by the university; and
- (iv) Atleast 50% marks at the Higher Secondary/Intermediate/Pre-University Examination, as the case may be.

OR

- (C) (i) A Master's Degree with First Class or Grade 'A' in a relevant subject; and
- (ii) Atleast 50% marks at the Bachelor's Degree Examination on the basis of which division is awarded by the University; and
- (iii) Atleast 50% marks at the Higher Secondary/Intermediate/Pre-University Examination as the case may be.

Provided further that in the case of categories (B) and (C), a candidate will have to obtain a Doctor's Degree/M.Phil. Degree or have to his credit published research work of equivalent standard within 5 years of his appointment failing which he will not earn future increments until he fulfils these requirements.

N.B.: The requirement regarding minimum percentage of marks shall be relaxed upto 5% in case of Scheduled Castes/Scheduled Tribes candidates.

(iii) Professors & Readers

- (a) (i) A Doctor's Degree or published work of an equivalent high standard; and
- (b) (i) A Second Class Master's Degree in a relevant subject with atleast 50% marks (B in the seven point scale) or an equivalent Degree of a foreign university; and
N.B.: (While taking into account the marks/grade, the marks/grade obtained in internal assessment, if any, shall be excluded).
- (ii) Atleast 50% marks at the Bachelor's Degree Examination on the basis of which division is awarded at the Degree level by the university; and
- (iii) Atleast 50% marks at the Higher Secondary/Intermediate/Pre-university Examination, as the case may be; AND

(Continued on next page)

PGI offers course in clinical pharmacology

The Postgraduate Institute of Medical Education and Research at Chandigarh will shortly introduce an advanced course in clinical pharmacology.

PGI will be the first Institute in South East Asia to introduce such a course after postgraduation in clinical pharmacology.

Those who have done M.D. will be eligible for the course. The Institute will admit students from all the south east Asian countries.

The Institute has already a course in Pharmacology at the postgraduate level. The Union Health Ministry has decided to develop this faculty at the advanced level.

Specialists from all over the world will be invited to deliver lectures. In clinical pharmacology the tests of drugs and medicines are done on human beings. Methods to protect human beings from any reaction of the medicines have also been devised.

Punjabi Varsity introduces new degree course

The Punjabi University has introduced a special degree course from the current academic session at the Government Mahendra College, Patiala for improving the standard of education and preparing the students simultaneously for the combined defence services examination.

The new course will enable the students to earn their degree as well as prepare for the competitive examination of the Union Public Service Commission. The department of defence studies of the university will ensure efficient running of the course. The syllabi for the subjects except Punjabi (compulsory) will broadly be on the lines of the syllabi for the UPSC written examinations. The medium of instruction will be English or Punjabi and the other subjects will be offered as elective subjects.

On completion of the career-based course, candidates will be eligible for admission to M.A. Course.

(Continued from previous page)

- (c) (i) In the case of Professors the experience of teaching of Post-graduate Classes shall be atleast 10 years and in the case of Readers the experience of teaching Post-graduate Classes shall be atleast 5 years; and
- (ii) In case of Professors, evidence of candidates/having been awarded a Doctor's Degree under his supervision and in the case of Reader atleast three years experience of guiding research.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published research work is of very high standard, it may relax any of the qualifications prescribed in (b) above.

N.B.: The requirement regarding minimum percentage of marks shall be relaxed upto 5% in case of Scheduled Castes/Scheduled Tribes candidates.

It will be open for the university to consider the name of any eminent person distinguished in Scholarship who may not have applied for the post.

(4) Specialisation

Specialisation in the relevant branches of the subject concerned will be essential for the following posts as shown against them which the candidate should indicate specifically in the application form:

S. No.	Subject	Post	Relevant Branch of specialisation
1.	Physics	Two Lecturers	Spectroscopy/Plasma Physics/Nuclear Physics or Theoretical Physics will be preferred.
2.	Mathematics	One Lecturer	Linear Algebra/Mathematical Statistics/Combinatorial Mathematics & Graph Theory.
3.	Chemistry	One Reader	Inorganic/Organic Chemistry.
4.	Geology	One Reader	Coal and Petroleum Geology/Economic Geology/Applied Geology.
		One Lecturer	Mineral Exploration/Petrology/Stratigraphy & Palaeontology.
5.	Botany	Two Lecturers	Ecology/Mycology/Cytogenetics.
6.	Zoology	Two Readers One Lecturer	Fish & Fisheries/Endocrinology. Fisheries Biology/Animal Physiology/Developmental Biology/Biochemistry / Environmental Biology.
7.	English	One Reader	Linguistics.
8.	Hindi	Two Lecturers	Linguistics / Stylistics / Western Literature and Criticism.
9.	Sanskrit	One Lecturer	Darshan/Vedic.
10.	Pol. Science	One Lecturer	Behavioral Research and Empirical Theory.

All appointments will be on probation for two years in the first instance except on the posts indicated as temporary. Superannuation age is 60 years. In addition to pay, above scales carry dearness allowance, additional dearness allowance and the benefit of contributory provident fund (after confirmation) as per rules of the university in force from time to time. Higher start is possible to deserving candidates.

Scheduled Castes & Scheduled Tribes candidates will be given preference, if found suitable.

Applications complete in all respects and accompanied with Crossed I.P.O. of Rs. 7.50 np. for the post of Professor, Rs. 5 for the post of Reader and Rs. 3 for the post of Lecturer and Research Fellow payable to the Registrar, Vikram University, Ujjain (M.P.) should reach the undersigned on or before 20.9.1978. The envelope containing application form, should be marked 'Application for the post of Professor/Reader/Lecturer/Research Fellow in the School of Studies/Deptt. in _____'. Separate application form is essential for each post.

Application received after the last date or not on the prescribed form with fee may not be considered. Candidates already in service should apply through proper channel. Candidates called for interview will have to attend the same at their own cost.

The university reserves the right to fill-up or not to fill-up any post advertised and/or to call only selected candidates for interview.

V. Shankaran
REGISTRAR

ALIGARH MUSLIM UNIVERSITY

Advertisement No. 19/78-79

Applications, on the prescribed form, are invited for the following posts :

Scale of Pay : 1. Reader : Rs. 1200-50-1300-60-1900 plus allowances.

2. Lecturer : Rs. 700-40-1100-50-1600 plus allowances.

Readers in: 1. Economics

2. Statistics (Temporary)

Qualifications: (a) A first or a high second class Master's Degree in the subject concerned of an Indian University or an equivalent foreign qualification; (b) A research degree of a doctorate standard or published work of a high standard; and (c) At least five years experience of teaching postgraduate classes and some experience of guiding research.

Desirable for Economics : Sound knowledge of Economics Theory.

Lecturers in: 1. Statistics (One permanent and some temporary)

2. Economics.

Qualifications : (a) A Doctor's Degree or research work of an equally high standard; and (b) consistently good academic record with 1st or high 2nd class (B in the seven point scale) Master's degree in a relevant subject or an equivalent degree of a foreign University.

Having regard to the need for developing interdisciplinary programmes, the Degrees in (a) and (b) above may be in relevant subjects.

Desirable for Economics : Knowledge of Statistics.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard; it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable; a person possessing a consistently good academic record (weightage being given to M.Phil. or equivalent degree or research work of quality) may be appointed provided he has done research work for atleast two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's Degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Prescribed application forms and instructions may be had from the Deputy Registrar (Executive) either personally or by sending a self-addressed envelope of 23x10 cm. Last date for receipt of applications is 5th September 1978. Incomplete applications and those received late may not be considered.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T.A. equal to one single Second Class Railway fare only.

Jamalur Rahman
REGISTRAR

A list of Doctoral Theses Accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Gupta, Shyam Kumar. On the reconstruction conjecture in graph theory. Indian Institute of Technology, Delhi.
2. Jaggi, Davinder Singh. A study of fixed-point mappings in metric spaces. University of Delhi.
3. Rath, Subhadra. The theory of summability and its applications. Berhampur University.
4. Varma, Hari Prasad. Manava Sulba Sutra: A critical study of this unpublished work on Vedic Geometry. Mithila University.
5. Verma, Swayam Prakash. Approximate mathematical solutions of fluid flow problems in porous media. South Gujarat University.

Statistics

1. Banerjee, Amal Kumar. Contribution to design and analysis of experiments. University of Delhi.
2. De, Nandakisor. Multivariate nonparametric tests against restricted alternatives. University of Calcutta.
3. Shah, Dhirajlal Nanchand. Use of auxiliary information in estimation in sampling theory. Sardar Patel University.

Physics

1. Bose, Gouranga. Optical coherence measurements and holographic interferometry. Indian Institute of Technology, Delhi.
2. Datta, Ajit Kumar. Some problems in general relativity. University of Calcutta.
3. John, V. Studies on growth and dissolution of forsterite and fluorite crystals. Sardar Patel University.
4. Majmudar, Nita Harinendra. Study of the Upper atmosphere with OH and other airglow Emissions. M.S. University of Baroda.
5. Mukherjee, Alok Kumar. Determination of crystal and molecular structure of some organic compounds of biological importance. Visva-Bharati.
6. Satyanarayana, Upadrashta. Isospin dependence of optical potential for neutrons upto to 14 MCY. Andhra University.
7. Sibani Debi. The binding energies, charge form factors and 1 GeV proton elastic scattering analysis for light nuclei. University of Calcutta.
8. Sur, Debanjan. Some studies on the structure of jute yarn in relation to its physical characteristics. University of Calcutta.

Chemistry

1. Datta, Mamta. Oxidation of some organic substrates induced by ascorbic acid. Vikram University.
2. Deshpande, Ratnakar Gopalrao. Studies in metal complexes. Marathwada University.
3. Gupta, Sachhidanand. Synthesis of N, N-substituted—Bis-Dioximes and their use as reagents in inorganic analysis. Meerut University.
4. Gurbir Singh. Radiochemical studies in the carrying of arsenate and certain other ionic species on selected ionic solids. University of Delhi.
5. Hendi, Shivakumar Basalingappa. Studies in the Indole field. Karnatak University.
6. Jain, Suresh Chand. Radioactive indicator studies in certain aspects of the carrying of Strontium (II), Yttrium (III) and Phosphorus (V) by preformed Barium sulphate. University of Delhi.
7. Khera, Urmil. Chemical investigation of the stem bark

of Dalbergia volubilis and seeds of Dalbergia latifolia. University of Delhi.

8. Mallur, Nirmalkumar Basappa. Studies on few coordination compounds. Karnatak University.
9. Manchanda, Ved Prakash. Synthesis of some naturally occurring Flavonoids. University of Delhi.
10. Muralidhara Rao, Volety. Studies on the solvent extraction of chromium. Andhra University.
11. Naik, Nalinkumar Ramanlal. Some aspects of the Chemistry of 6, 7-Methylenedioxy—and 6 Methy 1—4-Oxoquinoxolines. Sardar Patel University.
12. Pande, Rama. Hydroxamic acids as analytical reagents. Ravishankar University.
13. Prasad, K.S.V. Synthesis of possible Antiamoebic agents. Vikram University.
14. Roychowdhury, U.K. Vibrational and rotational temperatures of $N_2^+(B^+_u \leftarrow X^+_g)$ and $N_2(C^3\Pi_u \leftarrow 6B^3\Pi_g)$ band systems from a nitrogen plasma in magnetic field. Indian Institute of Technology, Kanpur.
15. Satyanarayana, D. Some new applications of the mercury reductor. Andhra University.
16. Saxena, Suresh Chandra. A study on genesis and physicochemical properties of clay minerals of Rajasthan soils. University of Udaipur.
17. Sharma, Naresh Chand. Solution grown variable band gap in $Pb_{1-x}H_xS$ films. Indian Institute of Technology, Delhi.
18. Srisankar, E.V. On some aspects of the radiolysis of nitrilotriacetic acid and its metal complexes in aqueous solutions. University of Calcutta.
19. Subramanyam Reddy, K. A study in thermodynamic properties of solutions: Excess volumes and isentropic compressibilities. Sri Venkateswara University.
20. Varma, Radhe Shyam. Studies in kinetics and mechanism of oxidation of some amino acids by potassium permanganate. Vikram University.
21. Vijayvargiya, Basanti Lal. Studies of metal complex of catecholamines. Vikram University.
22. Vyas, Nutanben Govindswami. With polymers: Cellulose acetate butyrate in solution. Sardar Patel University.

Earth Sciences

1. Das, Niranjana Kumar. A contribution to the palaeontology and Stratigraphy of a part of marine Cretaceous formation of Meghalaya. University of Gauhati.
2. Desh, Mittra. Thermal dehydration and phase transformations of some selected Zeolites from Poona and Nasik Areas of Deccan Traps, India. University of Delhi.

Engineering & Technology

1. Basuray, P.K. Simulation of surface generated in fine-grinding: A probabilistic approach. Indian Institute of Technology, Kanpur.
2. Bhavsar, V.C. Experimental and theoretical investigation on optimization of thermal design of cross flow finned-tube heat exchangers considering some of the important parameters. Bhopal University.
3. Gulab Singh. Two stage estimation in power systems. Indian Institute of Technology, Delhi.
4. Mukhopadhyay, Rabindranath. A new concept of planning for housing with precast reinforced Concrete Troughed panels as substitute to conventional building materials. University of Calcutta.

BIOLOGICAL SCIENCES

Anthropology

1. Daschaudhuri, Pratima. Concept of disease and methods of treatment (Medical and Non-medical) in West Bengal. University of Calcutta.

Biochemistry

1. Das, Sunil. Role of D.N.A. binding proteins of bacteria in Nucleic acid metabolism. University of Calcutta.
2. Poddar, Mrinal Kanti. Delta-I-Tetrahydrocannabinol and brain ribosomes. University of Calcutta.

Botany

1. Jhas, Shashi Nath. Biosystematic and ecological studies in the Bryophytes of North Bihar. Mithila University.
2. Kalode, Manohar Balaji. Biology, cytology, life cycle studies, and systematics of some rare genera of Uredinales from Central India. Nagpur University.
3. Khare, Vinayak S. Study on the vegetation and flora of Ujjain District. Vikram University.
4. Markandeya, Satish K. Morphological studies in the monocotyledons-IV. Marathwada University.
5. Mehta, Suresh Chandra. Ecology of grazing land with reference to impact of grazing and fire on primary production. Vikram University.
6. Naqvi, Syed Mohammad Ali. Study on microbiological complex of the rhizosphere in relation to fusarium wilt of chillies, *Capsicum annum*. Vikram University.
7. Narayan Rao, A. Ecophysiological responses of crops and weeds against herbicides and their residues. Vikram University.
8. Pachpar, Subhas Shantaram. Ecological studies on *Cassia auriculata* Linn. University of Udaipur.
9. Rajakumar, N. Physiology of differentiation in relation to sex expression influenced by kinetin and morphactin in castor, *Ricinus communis* L. Sri Venkateswara University.
10. Sau, Haradhan. Chromosome evolution and the response to external agent in certain tribes of Orchidaceae and other families. University of Calcutta.
11. Sen, P. Trisomic analysis in rice, *Oryza sativa* L. Utkal University.
12. Singh, Anjani Kumar. Cultural and pathological studies of certain fungi associated with the fruits in North Bihar Region. Mithila University.
13. Singh, Kapildeo Narain. Studies on the genus *Curvularia*. University of Bihar.
14. Sreenivasulu, P. Studies on Chlorotic spot virus (GCSV infected groundnut leaves, *Arachis hypogaea* L. Sri Venkateswara University.
15. Thomas, Rachel. Use of electrophoretic techniques in the study of genetic polymorphisms in certain human serum proteins in the normal populations in comparison with malignancy and chromatographic techniques in comparing the alkaloid contents of normal and X-ray mutant of certain medicinal plants. University of Calcutta.
16. Wafai, Bashir Ahmed. Cytoembryology of some species of the genera *Tulipa* and *Fritillaria*. University of Kashmir.

Zoology

1. Brahmananda Rao, Bh. Studies on pesticidal and synergistic properties of a few indigenous plant material against some storage insects. Kakatiya University.
2. Dhyandendra Kumar. Toxicity of the pesticides to the kidney and the liver of a fish. *Anabas testudineus* Bloch. Visva-Bharati.
3. George, Susan. Studies on amphipods Crustacea of Visakhapatnam. Andhra University.
4. Ghosh, Lakshmi Kanta. A study on the aphids, Homoptera, Aphididae of Himachal Pradesh in Northwest Himalaya India. University of Calcutta.
5. Jagadisha, K. Studies on caridean prawns of Karwar. Karnatak University.
6. Mandal, Sisirkumar. Investigations on the behaviour of

fractional mutations in *Drosophila melanogaster* under different experimental conditions. University of Calcutta.

7. Mariappagoudar, Basanagouda Yallappagouda. Studies on the adrenals and the gonads of *Calotes versicolor* Daud, *Hemidactylus flaviviridis* Ruppel and some other reptiles with reference to steroidogenic Cellular sites. Karnatak University.

8. Narayana Reddy, K. Some aspects of denervation muscle atrophy with particular reference to protein metabolism in the frog *Rana hexadactyle* Lesson. Sri Venkateswara University.

9. Parihar, Rahul Patwardhan. Studies on the urinogenital organs in certain Indian teleostean fishes. Vikram University.

10. Pahari, Umapada. Studies on the hypothalamoneurohypophyseal system, adeno-hypophysis of the common Indian garden lizard, *Calotes versicolor* under normal and experimental conditions. University of Burdwan.

11. Patra, Kirttan Chandra. Histochemistry of vitellogenesis in spiders. Berhampur University.

12. Pramanik, Manimohan. Faunistic survey of soil Mesostigmatid mites (Acari) of Calcutta and 24-Parganas, West Bengal. University of Calcutta.

13. Raghavaiha, K. Aspects of neuroendocrine control of nitrogen metabolism of the fresh water field crab, *Paratelphusa hydrodromous* Herbst. Sri Venkateswara University.

14. Sarkar, Asok Kumar. Studies on the coelomocytes of Echinids and Annelids. University of Calcutta.

15. Satheeschandran Nair, S. Studies on some aspects of the ethology of the wild house mouse, *Mus musculus castaneus* with special emphasis on olfactory communication. University of Kerala.

16. Sinha Roy, Dulal Chandra. A study on orthocladinae, Diptera, Chironomidae of Eastern India. University of Burdwan.

17. Sreeramachandra Murthy, M. Studies on the metabolism of the gastropod mollusc, *Laevicaulis alte* in relation to annual reproductive cycle. Sri Venkateswara University.

Medical Sciences

1. Chattopadhyay, Ratna. Effect of pentose phosphate pathway inhibitor on testicular steroidogenesis and spermatogenesis. University of Calcutta.

2. Kaul, Pratibha. Effect of experimentally induced anemia on the testicular activity of toads, *Bufo melanostictus* and rats. University of Calcutta.

3. Lakhotiya, Champalal Laxminarayan. Effect of formulation and process variables on release of aspirin from plastic matrix. Nagpur University.

4. Tripathi, Prajapati. *Stri rog ka aurvediya nidan—samikshan*. Kameshwar Singh Darbhanga Sanskrit University.

Agriculture

1. Acharya, Harish Kumar. Evaluation of the efficiency of some bacterial inoculants. University of Udaipur.

2. Ashok Kumar. Studies on juvenile hormones and their analogues for the control of some insect pests. University of Udaipur.

3. Bairathi, Ramesh Chandra. Behaviour of different sources of sulphur on different soils and different crops with high analysis nitrogenous and phosphatic fertilizers. University of Udaipur.

4. Fotedar, Ramney. Studies on mechanism of resistance to the aphid, *Myzus persicae* Sulser in tomato, *Lycopersicon esculentum* L. University of Udaipur.

5. Gupta, Dinesh Chandra. Studies on the reniform nematode, *Rotylenchulus reniformis* Linford and Oliveira, 1940, infecting pulses. University of Udaipur.

6. Gupta, Prem Chand. Ecology and control of weeds in berseem, *Trifolium alexandrinum* L. University of Udaipur.

7. Jayaram, L.C. Capacity-intensity relationships of soil phosphorus and its dynamics under cropping. University of Udaipur.

8. Malleswara Rao, Chintapatla Uma. Development of indigenous slow-release nitrogen sources for rice in relation to water management. Orissa University of Agriculture and Technology.

9. Mishra, Rajendra Prasad. Studies on rhizosphere microflora of *Oryza sativa* Linn. Orissa University of Agriculture and Technology.

10. Nimbalkar, Sharad Amrutrao. Studies on the comparative efficacy of phorate, disulfan and phosphamidon in the control of aphids on potato, their phytotoxicity and residues in potato tubers. University of Udaipur.

11. Panja, Subrata Kumar. Genetic studies in rice with reference to certain aspects of adaptation. University of Calcutta.

12. Patel, J.C. Effects of irrigation, mulching and bioregulators on the productivity of sunflower, *Helianthus annuus* L. University of Udaipur.

13. Rameshwar Singh. Effect of temperature, humidity and other factors on the residual toxicity and persistence of insecticides. University of Udaipur.

14. Rathore, Ram Rakshpal Singh. Survey and evaluation of the effectiveness of pathogens and parasitic fauna of the cabbage semi-looper *Trichoplusia* in Hubner Lepidoptera, Noctuidae. University of Udaipur.

15. Sharma, Janmejai. Evaluation of E.P.T.C., Alachlor, and Atrazine mixture with and without crop protectants for weed control in maize, *Zea mays* L, grown in rotation with wheat. University of Udaipur.

16. Shinde, Vithal Kishanrao. Inheritance of quantitative characters in grain, *Sorghum vulgare* Pers. University of Udaipur.

17. Singh, Om Vir. Investigations on root and stem rot of sesamum, *Sesamum indicum* L caused by *Macrophomina phaseoli* (Maubl) Ashby. University of Udaipur.

18. Virk, Kulbir Singh. Studies on wilt of *Sesamum indicum* L caused by *Fusarium oxysporum* f. *Sesami* (Zapro) Castellani. University of Udaipur.

Veterinary Science

1. Chakravarty, Birendra Narayan. Physiological studies and lactational performance of non-producing crossbred cattle following estrogonic and progestational treatment. Haryana Agricultural University.

2. Pathak, Subhas Chandra. Studies on ketamine anaesthesia in Bovines. Haryana Agricultural University.

Additions to AIU Library

Ashraf, Jaweed. *Soviet education: Theory and practice*. Delhi, Sterling (c 1978) x, 200p.

Australian Vice-Chancellors' Committee, Canberra. *Student participation*. Canberra, Author, 1977. Discontd.

Baez, Albert V. *Innovation in science education—world wide*. Paris Unesco, 1976. 249p.

Beteille, Andre. *Inequality among men*. Delhi, Oxford University Press, 1977. x, 178p.

Burns, R. *Higher education and third world development issues*. Rome, Food and Agricultural Organization, Action for development, 1975. vi, 107p.

Cohen, Arthur M., and others. *Constant variable: New perspectives on the community college*. San Francisco, Jossey Bass, 1971. xvi, 238p.

Conger, John Janeway. *Adolescence and youth: Psychological development in a changing world*. New York, Harper & Row, 1977. xvii, 670p.

Corder, S. Pit. *Visual element in language teaching*. London, Longman, 1966. xi, 96p.

Dave, R.H., ed. *Reflections on lifelong education and the school*. Hamburg, Unesco Institute for Education, 1975. 80p.

Gopinathan V. and Adithan M, ed. *Mechanical engineering laboratory manual*. Madras, I.I.T., 1978. vi, 276p.

Gore, M.S. *Indian youth: Processes of socialisation*. Delhi, Vishwa Yuvak Kendra, (c 1977). 73p.

Hirsch Fred. *Social limits to growth*. London, Routledge and Kegan Paul, 1977. xii, 208p.

Holbrook, David. *Education, Nihilism and servival*. London, Darton, Longman & Todd, 1977. 170p.

Hopper, Earl and Osborn, Marilyn. *Adult students: Education, selection and social control*. London, Frances Pinter. 187p.

Hunter, John O. *Values and the future: Models of community college development*. California, Banner Books International, 1977. 166p.

Indian Council of Social Science Research, Delhi. *Critical*

issues on the status of women; Suggested priorities for action. Delhi, Author, 1977. v, 32p.

—Programme of women's studies. Delhi, Author, 1977. 26p.

India, Ministry of Education and Social Welfare. *Inventory of central government's programmes with relevance for youth work*. Delhi, Author, 1975. x, 189p.

India, Ministry of Education. *Learning to do: Towards a learning and working society: Report of the National Review Committee on Higher Secondary Education with special reference to Vocationalisation*. Delhi, Author, 1978. iv, 60p.

—Report of the Review Committee on the Curriculum for the Ten-Year School. Delhi, Author, 1977. 177p.

King, Edmund J., ed. *Reorganizing education: Management and participation for change*. London, Sage, 1977. 300p.

M'Bow, Amadou-Mahtar. *Unesco and the solidarity of nations: The spirit of Nairobi*. Paris, Unesco 1977. 186p.

Mukherjee, Dhurjati, ed. *Youth: Change and challenge*. 2V. Calcutta, Firma KLM, 1977. xvi, 162p.

National Council of Educational Research and Training, Delhi. *Curriculum for the ten-year school: A framework*. Delhi, Author, 1975. v. 53p.

Oliver, Albert I. *Curriculum improvement: A guide to problems, principles, and process*. New York, Harper & Row, 1977. viii, 392p.

Rovinski, Samuel. *Cultural policy in Costa Rica*. Paris, Unesco, 1977. 61p.

Sa'danoer, Amilijoes. *Socio-cultural problems of Agricultural development in West Sumatra*. Singapore, Regional Institute of Higher Education and Development, 1974. xiii, 107p.

Satya Sundaram, I. *Students unrest in India*. Machilipatnam, Author, 1976. 116p.

—Teachers' status in India. Machilipatnam, Author, 1976. 102p.

Sportswala, G.A. and Bright, Jagat S. *Rules and principles of games and sports*. Delhi, University Book & Stationery Co., 1977. 272p.

UNIVERSITY OF JAMMU

SITUATION VACANT

Applications on prescribed forms are invited for the following posts so as to reach the undersigned on or before **September 15, 1978**.

1. Professors (Rs. 1500-2500) in
 - (i) Botany (Cytogenetics)
 - (ii) Sheikh Baba Farid Chair (Punjabi language and literature).
2. Readers (Rs. 1200-1900) in
 - (i) Mathematics (Statistics or Topology).
 - (ii) Political Science (Political Sociology or Research Methodology).
 - (iii) Laws (Two posts) One in Constitutional Law/Administrative Law and One in International Law/Criminal Law.
3. Scheme posts of Physics, Department on purely temporary basis for the duration of the scheme i.e. four years.
 - (i) Technical Supervisor Rs. 900/- P.M. Fixed.
 - (ii) Sr. Research Fellow Rs. 600/- P.M. Fixed.
 - (iii) Jr. Research Fellow Rs. 400/- P.M. Fixed.

For full details and prescribed form please apply by sending a self addressed envelope of 25 cms.x10 cms. size bearing postage stamps worth Rs. 1.50 paise alongwith a crossed postal order of Re. 1/- drawn in favour of the Registrar, University of Jammu, Canal Road, Jammu Tawi-180001 J&K State, cashable at Jammu Post office.

K. K. Gupta
REGISTRAR

UNIVERSITY OF JABALPUR

Advertisement

No. Estt/78/3534

dated the 17th July, 1978

Applications are invited on the plain paper for the following posts, viz:

- (1) Professors: One each for Economics and Chemistry in the scale of pay of Rs. 1300-50-1500-75-1800-100-2000.
- (2) Readers: One each for Economics and Hindi in the scale of pay of Rs. 1100-50-1600.
- (3) Lecturers: One each for Economics, Chemistry and History and two for Law in the scale of pay of Rs. 620-40-900-50-1400.

ESSENTIAL MINIMUM QUALIFICATIONS

For Professors & Readers

- (a)(i) A doctor's degree or published work of an equivalent high standard; and
- (b)(i) A 2nd class Master's degree in a relevant subject with atleast 50% marks (B in the seven point scale) or an equivalent degree of a foreign University; and
N.B. 'While taking into account

the marks/grade, the marks/grade obtained in internal assessment, if any, shall be excluded'.

- (ii) Atleast 50% marks at the Bachelor's degree examination on the basis of which division is awarded at the degree level by the University; and
- (iii) Atleast 50% marks at the Higher Secondary/Intermediate/Pre-University Examination, as the case may be;

AND

- (c)(i) In the case of Professors the experience of teaching of post-graduate classes shall be atleast 10 years and in the case of Readers the experience of teaching post-graduate classes shall be atleast 5 years; and
- (ii) In case of Professors evidence of candidates having been awarded a doctor's degree under his supervision and in the case of Reader atleast three years experience of guiding research.

For Lecturers

- (a)(i) A doctor's degree or published research work of an equivalent high standard; and
- (b)(i) A 2nd class master's degree in a relevant subject with atleast 50% marks (B in the seven point scale) or an equivalent degree of a foreign University; and
N.B. (While taking into account the marks/grade, the marks/grade obtained in internal assessment, if any, shall be excluded).
- (ii) Atleast 50% marks at the Bachelor's degree examination on the basis of which division is awarded at the degree level by the University; and
- (iii) Atleast 50% marks at the Higher Secondary/Intermediate/Pre-University Examination, as the case may be.

Having regard to the need for developing inter disciplinary programmes the degree in (a)(i) and (b)(i) above may be in relevant subjects.

- N.B.: (i) The requirement regarding minimum percentage of marks shall be relaxed up to 5% in case of scheduled caste/scheduled tribe candidates.
- (ii) The post of Reader in Hindi and Lecturer in History, are temporary for the present.

DESIRABLE QUALIFICATIONS

- (a) For Professor in Chemistry Specialization in any branch of Chemistry.
- (b) For Professor in Economics Specialization in any subject preferably in Economics of planning

or in the Study of Integrated Rural Development.

- (c) For Reader in Economics Specialization in Economics (which includes Mathematical Economics and Economics Statistics)
- (d) For Lecturer in Chemistry Specialization in Macromolecular Chemistry/Analytical Chemistry.
- (e) For Lecturer in Law Specialisation or 3 years teaching experience in Constitutional Law or International Law.

Qualifications are relaxable in cases of candidates of exceptional merit. Names of eminent persons distinguished in Scholarships who do not apply may also be considered for selection. The candidates in their applications should give details of their 'Specialization' if any. Canvassing in any form by or on behalf of the candidates will disqualify him.

The applications showing the details of qualifications stated above along with information regarding the proof of the date of birth and past experience accompanied with a postal Order for Rs. 5/- in the name of undersigned should reach here not later than **25th August, 1978**. The candidates already in employment at present, should send their applications through proper channel. Those who applied in response to the earlier advertisement of this University for lecturer in Chemistry and fulfil the conditions of minimum qualifications prescribed in this advertisement need not apply again.

REGISTRAR

BERHAMPUR UNIVERSITY

Bhanja Bihar: Berhampur-7 (Ganjam)
Orissa

No. 10339/ADMN/BU/78

Date. 29.7.78.

Advertisement

Applications are invited in the prescribed form for two posts of Readers in English and one post of Reader in Labour and Social Welfare under this University in the scale of pay of Rs. 1200-50-1300-60-1900/-.

QUALIFICATION AND EXPERIENCE

- (i) A candidate shall have a good academic record with a first or high second class Master's Degree in the subject.
- (ii) A Doctorate Degree.
- (iii) Independent published research work (In addition to the published work mentioned in (ii) above.
- (iv) Teaching and Research experience for eight years, out of which at least five years should have been spent in regular teaching in the Post-Graduate/Honours classes, on the last date fixed for receipt of application.

Capacity to guide research shall be regarded as an additional qualification.

Seven copies of the prescribed application forms will be supplied to the candidates from the Office of the undersigned on payment of Rs. 10/- in person or by bank draft drawn on the State Bank of India in favour of the Registrar, Berhampur University, along with a self addressed envelope measuring 22 x 10 cms. affixed with postage stamps worth of Re. 0.85 Ps.

The applications duly filled in along with attested true copy of certificates, testimonial and publications, etc. should reach the undersigned on or before 21.8.1978. Applications received after the due date will not be entertained.

Candidates who are in service should apply through proper channel.

Persons in the Government service selected for appointment shall be allowed leave salary and pension contribution for an year only if they wish to retain their lien under Government.

Candidates may be required to appear for an interview before the Selection Committee at their own expenses. Selected candidates will be required to join the post within one month from the date of issue of the appointment order.

The University reserves the right to fill-up or not to fill up the posts advertised and/or to call only selected candidates for interview.

M. Mahapatra
REGISTRAR

INDIAN INSTITUTE OF TECHNOLOGY, KANPUR KANPUR-208016

Advertisement No. 21/78

Applications are invited for one post of Research Engineer/Scientific Officer 'B'/'A' in the Advanced Centre for Material Science of the Institute. This Centre has been set up by the Government of India to undertake frontier type research and development on materials of national importance. As part of it certain basic facilities for preparation and characterisation of different types of materials are being set up. The centre will also provide consultancy services to industry and conduct short-term courses. Some inter-institutional activities in the above areas will also be fostered.

Research Engineer 'B'/Scientific Officer 'B'

Pay Scale: Rs. 1100-50-1600.

Qualifications

Doctorate degree in Materials Science or related areas.

OR

M.Tech. (or equivalent) degree with atleast 5 years of practical experience in a public or private undertaking with a record of meaningful development/project activity. In exceptionally meritorious cases, the Selection Committee may relax the required number of years of experience.

Research Engineer 'A'/Scientific Officer 'A'

Pay Scale: Rs. 700-40-900-EB-40-1100-50-1300.

Qualifications

M.Tech. degree.

OR

B. Tech. (or equivalent degree with

atleast 3 years of practical experience in a public or private undertaking with a record of personal accomplishments in developmental/project activity. In exceptionally meritorious cases, the Selection Committee may relax the required number of years of experience.

Depending on qualifications and experience of the selected candidate appointment will be made either as Research Engineer/Scientific Officer 'B' or 'A'.

The selected candidate will be required to set-up and look after the superconducting magnet facility at the centre including the measuring equipment and also will be supposed to take care of routine measurements.

Preference will be given to SC/ST candidates if found suitable.

The post is temporary and appointment will be made for a period of two years on a contract basis.

Besides pay, post carries allowances according to Institute rules which at present correspond to those admissible to Central Government employees stationed at Kanpur. Candidates called for interview will be paid second class railway fare from the place of duty to Kanpur and back by the shortest route. All applicants from Govt./Quasi-Govt. organizations public undertakings should forward their applications through proper channel.

Applications should be made on the prescribed form, obtainable free of charge from the Registrar of the Institute by sending a self addressed unstamped envelope of 25 cm.x10 cm. size. Applications should be accompanied by a postal order for Rs. 7.50 (Rs. 1.87 for SC/ST candidates) in the name of the Registrar, Indian Institute Technology, Kanpur-208016 and should reach him on or before August 31, 1978.

PANJAB UNIVERSITY CHANDIGARH

Advertisement No. 19/78

Applications are invited for the following posts so as to reach the Registrar, Panjab University, Chandigarh, along with postal order for Rs. 10/- for posts at Sr. No. 1 to 9 and Rs. 5/- for posts at Nos. 10 and 11 by 28.8.1978. Fourteen days extra time is permissible to the persons who have to submit their applications from abroad.

POSTS, PAY-SCALES AND QUALIFICATIONS

1. Professors (Rs. 1500-60-1800-100-2000-125/2-2500)

(Microbiology-1, Public Administration-1, Botany-2)

QUALIFICATIONS

Essential

(a) A first or high second class Master's degree of an Indian University or an equivalent qualification of a foreign University in the subject with bright academic record;

NOTE: For Professor of Public Administration the Master's degree should be in

Public Administration or Political Science.

- (b) Either a research degree of doctoral standard or published research work of high standard in journals of repute.
- (c) About 10 years' experience of teaching post-graduate classes and/or research; and
- (d) Experience of guiding research at Doctoral level.

OR

An outstanding Scholar with established reputation who has made significant contribution to knowledge in the discipline concerned.

Desirable

Professor of Microbiology

Specialisation in the area of Agricultural Microbiology or Medical Microbiology.

Professor of Botany

Outstanding meritorious contribution in any field of Botany, one preferably in cryptogams.

2. Readers (Rs. 1200-50-1300-60-1900)
Analytical Chemistry-1 (Department of Chemistry), Hindi-1 Botany-2 (including one in Plant Physiology)

QUALIFICATIONS

Essential

- (a) A first or high second class Master's degree of an Indian University or an equivalent qualification of a foreign University in the relevant subject with bright academic record.
- (b) Either a research degree of doctoral standard or published research work of high standard in the subject concerned in journals of repute.
- (c) About five years' experience of teaching post-graduate classes and/or research; and
- (d) Competence to guide research.

Evidence of being engaged in making innovation in teaching methods and production of standard teaching material, will be an additional qualification.

Desirable

Reader in Hindi

- 1. Medieval Poetry.
- 2. Poetics/Linguistics/Modern Literature.
- 3. Knowledge of Sanskrit or English.

3. Lecturers (Rs. 700-40-1100-50-1600)
(Bryophytes-1 (Department of Botany), Virology-1 (Department of Microbiology), Inorganic Chemistry-3 (Permanent-2, Temporary -1), Physical Chemistry-1, (Department of Chemistry), Management-1 (Department of Public Administration), French-1.

QUALIFICATIONS

- (a) A Doctor's degree or research work of an equally high standard; and
- (b) Consistently good academic record with 1st or high second class i.e. 55% marks or more (B in the seven point scale) Master's degree in a relevant subject or an equivalent degree of a foreign University. Having regard to the need for developing interdisciplinary programmes, the degrees in (a) and (b) above may be in relevant subject.

The consistently good academic record at Pre-Master's level would be interpreted as an average of 50% or above at the two examinations prior to Master's examination.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of a very high standard, it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable a person possessing a consistently good academic record, (weightage being given to M. Phil. or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research Laboratory/Organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Desirable

Lecturer in Bryophytes

Doctorate degree in the field of specialisation with published work of high standard in journals of repute.

Lecturer in Virology

1. Ph. D. in Microbiology with specialisation in Virology.
2. At least 3 years experience in teaching or research in the area of Virology.
3. Specialised training or experience in the cell-culture or other modern techniques in the study of viruses.

Lecturer in Inorganic Chemistry & Physical Chemistry

Persons having post-graduate teaching experience will be preferred.

Lecturer in Management

M. Com. with specialisation in Accounting.

Lecturer in French

1. Training and minimum one year's experience in teaching French by the Audio-visual methods.
2. At least 3 years teaching experience at the University level.
3. A post-graduate certificate in teaching of French (P. G. C. T. E.) of the Central Institute of English and Foreign Languages, Hyderabad.
4. Curator-cum-Lecturer-1 (Rs. 700-40-1100-50-1600)
(Department of Microbiology)

QUALIFICATIONS

Essential

- (i) Ph.D. in Microbiology.
- (ii) Specific experience in the maintenance of cultures and taxonomy and preservation of all types of micro-organisms.
- (iii) Teaching and research experience

in the area of systematic bacteriology and/or Pathology.

5 Research Associate (Technical)-1 (Rs. 700-40-1100-50-1300)

(Under Special Assistance Programme of U.G.C in the Department of Botany)

QUALIFICATIONS

Essential

M.Sc. Physics with specialisation in Instrumentation / Applied Physics / M. Tech/B.E. in Electronics with specialisation in instrumentation with 3 years experience/Diploma in Electronics with 7 years experience in repairs, maintenance and working of sophisticated electronic/analytical/optical/mechanical instruments.

Job requirement

Handling of instruments and repair and maintenance of the different types of equipment in the Department.

6. Instructor in Dance-1 (Rs. 500-20-700-25-900)

(Department of Music) (Hobby classes)

QUALIFICATIONS

- (i) One should be atleast graduate so as to give instructions, to the University students through English medium.
- (ii) One should be M.A. in Dance (M.Ds) having first or high second class from any Indian University.

Desirable

Preference will be given to a candidate having experience at her/his credit. Field of specialisation should be Kathak and the composition of different types of dance will be an additional qualification.

7. Research Fellow-1 (Rs. 500/-p.m.fixed) (Department of Gandhian Studies)

Essential

- (i) First or second class M.A. in any of the following subjects with good academic record:
 1. Political Science
 2. History
 3. Public Administration
 4. Sociology
 5. Philosophy
 6. Psychology.
- (ii) Diploma in Gandhian Philosophy

Desirable

Research experience especially in Gandhian Studies.

8. Research Scholars (Rs. 400/- p.m. (fixed) each) (Public Administration-1, Geology-2)

Essential

First or high second class Master's degree in the relevant subject with bright academic record and aptitude for research.

Desirable

Research Scholar in Public Administration

Knowledge of research methods and statistics.

9. Lexical Assistant-1 (Temporary) (Rs. 350-25-600)

(Department of English-Punjabi Dictionary)

Essential

M.A. (Punjabi), 55% marks having consistently good academic record and

graduation with science subjects. An additional M.A. in subjects other than languages.

Experience

At least five years practical experience as Proof-Reader in a Publication Unit. Preference will be given to those candidates having experience in Lexicography, Proof reading and an eye for accuracy.

10. Teaching Assistants (Rs. 300-25-600) (Grade is likely to be revised)

(Microbiology-2, Physical Chemistry-1 (Temporary).

Essential

Teaching Assistant in Microbiology

1. Atleast first class M.Sc. in Microbiology.
2. Post-M.Sc. experience in teaching or research of two years duration.
3. Specialisation in the area of conducting of Labs. in Environmental Microbiology, Physiology and Genetics or Immunology.

Teaching Assistant in Physical Chemistry

Atleast second class M.Sc. in Physical Chemistry with good academic record and teaching experience. The candidates possessing Ph.D. degree would be preferred.

11. Research Assistant-1 (Rs. 300-25-600) (Grade is likely to be revised) (Department of Microbiology)

Essential

1. M.Sc. in Microbiology in first division.
2. About two years post-M.Sc. experience in carrying out independent research work as evidenced by publications.
3. Experience in handling sophisticated equipment like GLC would be added qualifications.

Candidates for the posts of Professors and Readers who do not possess a doctoral degree are required to submit 10 typed/cyclostyled copies of brief resume of their published work. 15% posts of Lecturers will be reserved for the members of the Scheduled Castes and 2% for the members of the Scheduled Tribes, but these will be filled up by others if no suitable Scheduled Castes/Scheduled Tribes applicant is available.

Persons already in service should route their applications through proper channel. Incomplete forms and those received after the due date will not be entertained. Serving employees, may however, send their applications on the prescribed proforma, direct to the University. They may route another copy through their Departments. They will be allowed to present themselves for interview only on the production of a 'No Objection Certificate' from their employers. Canvassing in any form will disqualify the candidate.

Application forms can be obtained from the Cashier, Panjab University, Chandigarh, personally on payment of Re. 1/- or by making a written request to the Finance & Development Officer, Panjab University, Chandigarh, accompanied by self-addressed stamped envelop of 23 x 10cms. and a postal order for Re. 1/- drawn in favour of the Registrar, Panjab University, Chandigarh.

UNIVERSITY OF DELHI

Advt. No. Estd. IV/53/78 Dated 1st August, 1978
Applications on the prescribed forms are invited for the following posts:

Department	Designation & Area of Specialization
Faculty of Law :	
(i) Campus Law Centre	One Reader (Temp. upto 10.7.1980)
(ii) Evening Law Centre No. II	One Professor (Temp. upto 31-5-1980)
Faculty of Music & Fine Arts	(i) One Professor in Karnatak Music
	(ii) One Lecturer in Karnatak Music
Geography	One Professor
Computer Science	One Professor Computer Science
Mathematical Statistics	Two Readers—One Biostatistics
Philosophy	One Reader
Urdu	One Reader
Sanskrit	One Reader (Temp. but likely to continue)
Chemistry	One Reader—Inorganic Chemistry
History	Three Readers
Modern European Languages	(i) One Reader in Russian
	(ii) One Reader in French
	(iii) One Lecturer in German
South Delhi Campus	One Reader in Business Economics
Library Science	One Lecturer (Temp. upto 31.3.1980)
Commerce	One Lecturer (Temp. upto 31.8.1980)
Botany	Research Associates (one Temp. upto 1.8.1979)
Delhi University Library System	Five Professional Juniors
WUS Health Centre	(Temp. but likely to continue)
	Pharmacists (for Main & South Campus—certain vacancies are reserved for S/C and S/T).
Zoology	Nine Laboratory Attendants (Temp. but likely to continue—one each reserved for S/C, S/T and two for X/S.)
Chemistry	(i) Two Technical Assistants (temp.) (one each reserved for S/C & X/S.)
	(ii) Two Junior Laboratory Assistants (Temp.) (One each reserved for S/T and X/S)
	(iii) One Laboratory Attendants (temp but likely to continue) (Reserved for S/T)
Chinese & Japanese Studies	One Lecturer in Chinese Studies (Temp. upto 24.7.1979).
Computer Centre	Two Console Operators
	(One each reserved for S/C & X/S.)

The Scales of Pay of the Posts are:

Professor ...	Rs. 1500-60-1800-100-2000-125/2-2500.
Reader ..	Rs. 1200-50-1300-60-1900.
Lecturer ...	Rs. 700-40-1100-50-1600
Console-Operator ...	Rs. 550-25-750-EB-30-900.
Research Associate ...	Rs. 700-40-900-EB-40-1100-50-1300.
Professional Junior ...	Rs. 700-40-1100-50-1300.
Pharmacist ...	Rs. 330-10-380-EB-12-500-EB-15-560.
Technical Assistant ...	Rs. 425-15-500-15-560-20-700.
Jr. Lab. Assistant ...	Rs. 260-8-300-EB-8-340-EB-10-380-EB-10-430.
Lab. Attendant ...	Rs. 210-4-250-EB-5-270.

All posts carry D.A., C.C.A. and H.R.A. as admissible under the rules in force in the University from time to time.

ESSENTIAL QUALIFICATIONS FOR Professorships

A Scholar of eminence.
Independent published work of high standard and experience of teaching Post-graduate Classes and guiding research for a considerable period desirable.

Professorship in the field of Karnatak Music

A Scholar of eminence.
Independent published work of high standard and long experience of teaching Post-graduate Classes.

Readerships

Good academic record with first or high second class Master's Degree in the subject concerned with a Doctor's Degree or equivalent published work. Independent published work (in addition to the published work mentioned above) with atleast 5 years' teaching experience in Honours/Post-graduate classes essential.

Lectureships

Good academic record with a first or high second class Master's degree or an equivalent degree of a foreign University in the subject concerned. (Note—Second Class would mean atleast 50% marks in the subject or equivalent grade).

Desirable: (i) A Doctor's Degree or Evidence of Research work of equivalent standard in the subject concerned. (ii) Teaching experience of Degree/Post-graduate classes. Provided if a teacher is not a Ph.D/M.Phil./M.Litt. at the time of his/her appointment and does not qualify

himself/herself for the award of Ph.D./M.Litt. degree from a recognised University in a subject which is being taught by him/her within a period of five years from the date of his/her appointment or does not give evidence of research work within that period in the subject concerned, he/she shall not be entitled to any future increments after the expiry of the said period of five years till such time he/she fulfils the above mentioned requirements.

Lecturer—(Under the Faculty of Music & Fine Arts)

Good academic record with a first or high second class Master's Degree or an equivalent degree of a foreign University in the subject concerned.

Research Associateship

Good academic record with first or high second class (B+) Master's Degree or an equivalent degree of a foreign University in Botany, or allied sciences.

Note: Initial appointment will be for a tenure period of three years extendable by another two years only. In no case the tenure will extend beyond 5 years in all.

Professional Juniors

First or Second Class
B.A./B.Sc./B.Com. plus
First or Second Class
M.Lib.Sc. Degree; OR
First or Second Class
M.A./M.Sc./M.Com. Degree and First or Second Class
or Post-graduate B.Lib.Sc.
Diploma in Library Science.

Pharmacists

Matric or equivalent. Must have passed Pharmacists (Compounder) Course from a recognised institution and must be a registered Pharmacist.

Two years' experience in the profession is desirable.

Technical Assistants

Graduate in Science.
Experience in Laboratory Techniques of the subject.

Junior Laboratory Assistants

Should have passed Matric or equivalent Examination with Science subjects.

Laboratory Attendants (Chemistry & Zoology)

Should have passed the Matriculation or an equivalent examination with Science subjects.

Console-Operator

(a) Atleast a Second Class (not less than 50% marks in the aggregate) Master's Degree in Mathematics, Statistics, Econometrics, Operational Research or Physics;

OR

Atleast a Second Class (not less than 50% marks in the aggregate) Bachelor's Degree in Engineering from a recognised Institution; and
(b) Familiarity with Console Operation.

SPECIAL/DESIRABLE QUALIFICATIONS FOR

Professorship in Karnatak Music

(i) Eminence in the field of public performance. (ii) A Doctor's Degree (iii) Original composition/research work of high standard.

Readership in History

1st post : Modern Indian History

2nd post : Modern Indian History with proficiency in Economic History.

3rd post : Medieval Indian History, proficiency in handling the Persian Sources.

Readership in Russian

(i) Advanced training in translation technique; (ii) Experience in practical translation; (iii) Training in Language Laboratory and material production.

Lectureship in Business Economics

Econometrics or Applied Economics.

Lectureship in Library Science

Two years teaching experience to post-graduate degree classes in Library Science or two years working experience in academic or a special library at the level of atleast a professional Assistant.

Lectureship in Commerce

Ability to teach Organization Theory and Behaviour/Statistics/Marketing/Accounting.

Lectureship in Karnatak Music

(i) Experience of teaching degree classes for not less than two years.

(ii) Evidence of published work.

(iii) Working knowledge of three of the the languages mentioned below:

Sanskrit, English, Telugu, Tamil, Malayalam, Kannada.

Readership in Urdu

Specialization in Modern Urdu Literature produced between 1857 to 1947.

Readership in Sanskrit (temp.)

Epigraphy.

Professorship in Computer Science

Doctor's Degree in Computer Science/Electrical Engineering/Physics/Electronics Communication Engineering/Mathematics/Mathematical Statistics. Atleast 5 years' experience of working in a Computer system as well as on the development of Computer Science techniques have relevance to Natural or Social Sciences.

Readership in Mathematical Statistics (for Second post)

Specialization in one or more of the following:

(i) Statistical Inference (ii) Design of Experiments (iii) Sample Survey (iv) Renewal Processes.

Research Associateships

Research experience in inter-disciplinary areas of plant biology.

Professional Juniors

(i) Candidates possessing High Second Class with 55% of marks and above will be preferred. (ii) Ph.D. in Physics, Chemistry, Mathematics, Zoology or Botany would be an additional desirable qualifications.

Junior Laboratory Assistants

Should have knowledge of handling stores of scientific goods and chemicals.

Lectureship in Chinese Studies

Preference will be given for research work on Internal Developments in Communist China.

Console-Operators

Knowledge of the elements of Computer Programming.

Laboratory Attendants (Chemistry & Zoology)

Should have worked in a Laboratory.

Note: Abbreviations used

S/C = Scheduled Caste;

S/T = Scheduled Tribes;

X/S = Ex-Servicemen.

The prescribed application form can had from the Information Office of the University either personally or by sending a self-addressed envelope (size 5" x 11") with postage stamps worth Rs. 2.80.

Selected candidates will have to produce original documents relating to their age, qualifications, experience, etc. at the time of interview.

Applications (separate for each post) accompanied by attested copies of the Degrees, other certificates, mark-sheets, published research articles, etc. should reach the undersigned not later than 31st August, 1978.

Note: 1. It will be open to the University to consider the names of suitable candidates for teaching posts who may not have applied. Relaxation of any of the qualifications may be made in exceptional cases, in respect of all teaching posts on the recommendations of the Selection Committee.

2. Canvassing in any form by on behalf of the candidates will disqualify.

3. Candidates from outside Delhi, for teaching posts only, called for interview will be paid contribution towards travel expenses equivalent to 1½ single Second Class Rail fare.

4. Those who had applied in response to the earlier advertisements (Nos. 40 & 42) for Readership in History, Russian, Mathematical Statistics, Urdu, Chemistry, Sanskrit and Philosophy & Professorship in Geography and Computer Science, need not apply again, but in case they have any additional information to supply, they may do so.

REGISTRAR

GURU NANAK DEV UNIVERSITY, AMRITSAR Advertisement No. 15/78

Applications are invited for the following posts on prescribed form obtainable (free of cost) from office of the Registrar, Guru Nanak Dev University, Amritsar by making written request accompanied by self-addressed stamped envelope of 23 x 10 cms. so as to reach this office by 31.8.1978 along with crossed postal order(s) for Rs. 7.50 for posts at Sr. No. 1 to 4 and Rs 5/- for post at Sr. No. 5 drawn in favour of Registrar, Guru Nanak Dev University, Amritsar. Application fee is not refundable.

Note: Persons already in employment

must send their applications through their employers.

Grade: (plus allowances as admissible under University rules)

1. Professor of Applied Chemistry (Rs. 1500-60-1800-100-2000-125/2-2500)

2. Principal for Guru Nanak Dev University Evening College, Jullundur. (Rs. 1200-50-1300-60-1540/60-1900)

3. Reader in Psychology (Rs. 1200-50-1300-60-1900)

4. Reader in Guru Nanak Studies Department (Rs. 1200-50-1300-60-1900)

5. Photomicrographer for Biology Department (Rs. 145-7-180-12-300)

Qualifications: For post at Sr. No. 1:

(i) A Doctor's degree or published work of an equally high standard; (ii) consistently good academic record with 1st or high 2nd Class (b+) Master's degree in a relevant subject or an equivalent degree of foreign University. (iii) About ten years' teaching experience to M.Sc. or M. Tech. Classes and experience of guiding research for the award of Ph.D. and M.Sc. degree; (iv) considerable experience of research in extraction and hydrogenation of oils, soaps, fats paints, varnishes or dyes; (v) Experience of working in an industrial organization on research problems of applied nature or environmental Science, etc.

For post at Sr. No. 2: (i) At least Second Class Master's degree or an equivalent degree of foreign University in one of the subjects covered by the following faculties: (a) Arts & Social Sciences; (b) Sciences; (c) Languages and (d) Commerce and (ii) At least ten years' experience in colleges affiliated to this University, or other institutions of a similar standing.

Provided that in the case of persons holding Ph.D. degree the period of teaching experience may be relaxed to 5 years.

For posts at Sr. No. 3 & 4: Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

About five years' experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position.

Specializations for the post of Reader in Psychology. Experimental Psychology in the area of Learning, Motivation, Personality and perception.

Other essential and desirable qualifications for the post of Reader in Guru Nanak Studies Department. (i) M.A. in History; (ii) Publications in English and Punjabi/Hindi; (iii) Evidence of high quality post doctoral research. Desirable: Knowledge of Persian/Urdu and Hindi.

Note: Higher start may be given to a deserving candidates.

For post at Sr. No. 5: B.A./B.Sc. or equivalent with experience in Photomicrography.

Mohinder Singh Randhawa
REGISTRAR

DIBRUGARH UNIVERSITY DIBRUGARH

Advertisement No. 5/78

Applications are invited for the following posts:

1. Professor of History—One post
2. Professor of Statistics—One post
3. Reader in Statistics—Two posts
4. Reader in Anthropology—One post
5. Reader in Applied Geology—Two posts
6. Reader in Sociology—Two posts
7. Reader in Political Science—One post
8. Reader in Education—One post
9. Reader in Economics—One post
10. Lecturer in History—One post
11. Lecturer in English—Two posts
12. Lecturer in English (for Deptt of Education)—One post

Scale of Pay

Professor: Rs. 1500-60-1800-100-2000-125/2-2500/- (Revised)

Reader: Rs. 1200-50-1300-60-1900/- (Revised).

Lecturer: Rs. 700-40-1100-50-1600/- (Revised)

All posts carry usual allowances admissible under the University rules in force from time to time and the incumbents will be eligible for Contributory Provident Fund and Gratuity on confirmation as per rules of the University.

Essential Qualifications

- A. For Professor: (1) Candidates must be recognised scholars in the subject with Doctor's Degree or equivalent published work (2) Continuous research work of merit as evidenced by published papers in standard journals or published work of merit (3) 10 (ten) years' post-graduate teaching or 15 (fifteen) years' Honours teaching experience (4) Experience in guiding and promoting research.

In case of a candidate of exceptional abilities with outstanding research contributions, the requirement of teaching experience may be suitably relaxed.

- B. For Reader: Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

At least five years experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position.

C. For Lecturer

- (a) A Doctorate's Degree or research work of an equally high standard; and
 - (b) Consistently good academic record with 1st or high 2nd class (B in the seven point scale) Master's Degree in a relevant subject or an equivalent degree of a foreign University.
- Having regard to the need

for developing interdisciplinary programmes, the degrees in (a) and (b) above may be in relevant subject.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a consistently good academic record (weightage being given to M. Phil. or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils those requirements.

Specialisation required

- (i) For the post of Reader in Statistics:

Post No. 1: Econometrics / Demography/Educational Statistics/Information Theory.

Post No. 2: Stochastic Processes/Statistical Inference/Experimental Design / Sample Survey.

- (ii) For the post of Reader in Applied Geology:

Post No. 1: Specialisation in any basic branches of Geology (e.g. Structure and Tectonics, Stratigraphy, Sedimentology, Palaeontology, Mineralogy, Petrology, Photogeology etc.) preferably with applied orientation and industrial and/or field experience.

Post No. 2: Specialisation in any applied branches of geology (e.g. Geological mapping, Economic Geological prospecting, Geophysical prospecting, Geochemical prospecting, Engineering Geology, Mining Geology, Mineral technology, Mineral economics etc.) preferably with industrial and/or field experience.

- (iii) For the Post of Reader in Anthropology:

Physical or Social Anthrology.

- (iv) For the post of Reader in Sociology:

Post No. 1: Criminology, Sociological Theory.

Post No. 2: Industrial Sociology / Sociology of North East India.

- (v) For the post of Reader in Political Science:

Political Theory.

- (vi) For the post of Reader in Economics:

Industrial Economics or/on Economics of Education.

- (vii) For the post of Reader in Education:

M. Ed. or M.A. in Education with B.T./B Ed.

- (viii) For the post of Lecturer in History:

Medieval Indian history and knowledge of Russian will be given preference, if however no such person is available, preference will be given to a person of Ancient Indian History and Culture.

- (ix) For the post of Lecturer in English (for Deptt. of Education):

(a) English language teaching with training in teaching English as a foreign language in any Institute/Centre of foreign language.

(b) Preferably with B.T./B.Ed. or M. Ed.

Nine copies of applications for a post of Professor and seven copies of applications for a post of Reader or a Lecturer in plain papers giving full bio-data including (1) Name in full (in block letters); (2) Father's name; (3) Date of birth; (4) (a) Permanent address (b) Present address (5) Present occupation, if any, including name of employer; (6) Present salary drawn (if any); (7) Detailed academic career from Matriculation/Higher Secondary/High School Leaving Certificate Examination and onwards showing division/class, aggregate percentage of marks, School/College/University from which appeared (attested copies of Marksheets, Certificates should be enclosed); (8) Details of appointments held with designations, duration, nature of works and name of employers; (9) Research contributions with copies/reprints; (10) Name and address of two referees not related to the candidate together with an application fee of Rs. 5/- (Rupees five) by CROSSED INDIAN POSTAL ORDER drawn in favour of the Registrar, Dibrugarh University, should be sent in an inner sealed cover superscribed "Application for the post of (Name of the post applied for), Advertisement No 5/78 enclosed in an outer cover addressed to the Registrar I/C., Dibrugarh University, Dibrugarh to reach him not later than 4.9.78.

The number of this advertisement and name of the post applied for must be referred to in the application. Persons in employment should apply through proper channel or with a no objection certificate from the present employer. All reprints of the research papers published must be attached.

Applications not in conformity with the above requirements will not be entertained.

Candidates will be required to appear at an interview if and when called for. Candidates called for interview for the post of Professor and Reader will be given actual T.A. First/Second Class Railway fare according to the rules of this University.

K. Sarma
REGISTRAR I/C

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10/11/78



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AI. 3415 A

University news

CHRONICLE OF HIGHER EDUCATION & RESEARCH SEPTEMBER 1, 1978 80 PAISE



Mr. Jagjivan Ram, Union Defence Minister, speaking at the inauguration of the Second Joint Conference of State Representatives and Directors of NCC held recently in New Delhi

**INDIAN INSTITUTE OF
TECHNOLOGY, BOMBAY**
**P.O. I.I.T., Powai,
Bombay-400076**

Advertisement No 935/78

Applications are invited for a permanent post of EXECUTIVE ENGINEER (ELECTRICAL) at this Institute in the prescribed form obtainable from the Registrar, Indian Institute of Technology, P.O. I.I.T., Powai, Bombay-400076 on request accompanied by self-addressed envelope (23 cm x 10 cm). Persons employed in Government/Semi-Government Organizations or Educational Institutions must apply through proper channel. Completed application together with the requisite copies of certificates and crossed postal order for Rs. 7.50 (Rs 1.88 for SC/ST candidates) as application fee should be sent to the Registrar, Indian Institute of Technology, P.O. I.I.T., Powai, Bombay-400076 on or before 30th Sept. 1978. Candidates called for interview will be paid Second Class Rail Fare from the place of their residence to Bombay and back by the shortest route.

(1) Post

Executive Engineer (Electrical)

(2) Scale of Pay

Rs 1100-50-1600 (plus usual allowance such as D.A., C.C.A., etc as per rules of the Institute).

(3) Age

Not less than 32 years

(4) Qualifications & Experience

Good Bachelor's degree in Electrical Engineering with at least seven years' experience in the executive position concerning capital works and maintenance of electric supply and distribution system. Should be able to co-ordinate the various supply growth plans. Should have experience in the maintenance of water supply and sewage systems and Air-Conditioning and Refrigeration loads. Preference will be given to a candidate having experience both in Electrical and Mechanical Engineering. Qualification may be relaxed in the case of candidates with considerable experience and proven ability.

KAMARAJ UNIVERSITY

Notification No. 5/V/Advt/78

Applications in the prescribed form are invited for the following posts in the university:

Lecturers in Physics	Two
Lecturer in Plant Physiology	One
Lecturer in Plant Genetics	One
Lecturers in Mathematics	Two
Lecturer in Organic Chemistry	One

Scale of Pay

Rs 700-40-1100-50-1600

Higher starting salary will be offered in deserving cases.

Preference would be given to Scheduled Caste/Scheduled Tribe candidates who are considered fit.

Qualification

(a) A Doctor's degree or research work of an equally high standard; and

(b) Consistently good academic record with I or High II Class (B in the seven Point Scale) Master's Degree in the relevant subjects or an equivalent degree of a foreign university.

The prescribed form of application and other details can be got from the undersigned on requisition accompanied by

- (1) a self-addressed envelope with postage stamps to the value of 0-55 paise affixed thereon and
- (2) State Bank of India Challan for Rs 5 (ACCOUNT NO. I) or Demand Draft for Rs 5 payable at MADURAI drawn in favour of the Registrar, Kamaraj University, Madurai-625021.

The last date for receipt of application is 11th September 1978. Applications received after the due date will not be considered.

Those who have responded to a previous notification need not apply again.

**B. MURUGAN
REGISTRAR**

**PANJAB UNIVERSITY
CHANDIGARH**

Advertisement No. 20/78

Applications are invited for the following posts so as to reach the Registrar, Panjab University, Chandigarh, along with postal orders for Rs 10 by 11.9.1978. Fourteen days extra time is permissible to the persons who have to submit their applications from abroad.

Posts & Pay Scales

1. Director Professor-1

(Rs 1500-60-1800-100-2000-125/2-2500)

(Vishveshvaranand Vishva Bandhu Institute of Sanskrit & Indological Studies, P.U. Hoshiarpur)

Qualifications

Essential

- (i) A first or high second class Master's degree in Sanskrit of an Indian university or an equivalent qualification of a foreign university in the subject with bright academic record;
- (ii) Either a Research degree of doctoral standard or published Research work of high standard in journals of repute in the field of Vedic Language and Literature.
- (iii) About 10 years experience of teaching post-graduate classes and/or research in Vedic Language and Literature at a university or a recognised research institute and sufficient experience of guiding research at doctoral

level and supervising research projects;

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge in the discipline.

Desirable

- (i) Good knowledge of Nirukta Paninian Grammar (Vyakarna).
- (ii) Working knowledge of Avestan, German and French Languages.

2. Professor-1

(Rs 1500-60-1800-100-2000-125/2-2500)

(Department of Ancient Indian History, Culture & Archaeology)

Qualifications

Essential

- (i) A first or high second class Master's degree of an Indian university or an equivalent qualification of a foreign university in the subject with bright academic records;
- (ii) Either a research degree of doctoral standard or published research work of high standard in journals of repute;
- (iii) About 10 years' experience of teaching post-graduate classes and/or research; and
- (iv) Experience of guiding research at doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge in the discipline concerned.

Desirable

- (i) Specialisation in Ancient History or Culture or Archaeology.
- (ii) Good knowledge of Sanskrit.

Candidates who do not possess a doctoral degree are required to submit 10 typed/cyclostyled copies of brief resume of their published work.

Persons already in service should route their applications through proper channel. Incomplete forms and those received after the due date will not be entertained. Serving employees may, however, send their applications on the prescribed proforma, direct to the university. They may route another copy through their departments. They will be allowed to present themselves for interview only on the production of a 'No Objection Certificate' from their employers. Canvassing in any form will disqualify the candidate.

Application forms can be obtained from the Cashier, Panjab University, Chandigarh, personally on payment of Re 1 or by making a written request to the Finance & Development Officer, Panjab University, Chandigarh, accompanied by self-addressed stamped envelope of 23 x 10 cms and a postal order for Re 1 drawn in favour of the Registrar, Panjab University, Chandigarh.

UNIVERSITY NEWS

Vol. XVI

SEPTEMBER 1

No. 17

1978

A Fortnightly Chronicle **Price**
of Higher Education **80 Paise**

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*Opinions expressed in the articles
and reviews are individual and do
not necessarily reflect the policies
of the Association*

Hony. Editor : ANJNI KUMAR

Challenge on Farm Front

V. R. Mehta*

On the educational front, as observed by Gunner Myrdal in "Asian Drama", "the resulting character of education on all levels has not changed much in the independence era in India". The fundamental change in the educational system has not come in spite of the telling appeal of the Education Commission, "that Indian education needs a drastic reconstruction, almost a revolution. This calls for a determined and large scale action. Tinkering with the existing situation and moving forward with faltering steps, and lack of faith can make things worse than before". It has been emphasised by the Commission that the supreme aim of education should be to change the attitudes of the children and ultimately of the whole people, the values of the people as a whole. This is crux of the reform in education and particularly rural education.

'Rural education' is a phrase commonly used now. The International Council for Education Development commissioned by the World Bank has focussed attention on educational efforts outside the former school system which offer potential for rural development, non-formal programmes designed to increase the skills and productivity of farmers, artisans, craftsmen and small entrepreneurs. It has revealed the economic gap between nations as one dimension, the gap between urban and rural areas as another; and the gap within the rural areas as yet another.

The recent emphasis in India on integrated rural development through technological change has again brought into focus the need for linking education with economic growth and also linking education with social justice. How should such a radical change in the educational system and its philosophy and education in relation to needs be brought about so as to facilitate the spread of technology for development? This is the perspective of the whole problem. The critical role of education to foster economic change through spread of technology has to be understood analysed and spelt out in detail in terms of its philosophy, programmes and performances.

The major ill of the educational system today is that the education is too academic. The school education aims at preparing the students for entrance in colleges and universities; and our universities and colleges have limitations to admit them despite expanding the university system. The majority of young students in the schools would desire to terminate at or before the end of secondary school education and they want preparation for entering the world of work. Any system of education, before it can claim

*Former Vice-Chancellor, Gujarat Agricultural University.

to deliver the goods at the higher and professional levels has to find a solution to this problem. Remedies are known and suggested, but action to introducing or to adopt them has been slow.

The first reform has to come at the level of primary and secondary education. Mahatma Gandhi, much before independence—40 years ago—conceived “basic education” as a system of education for the masses of India. The pattern of basic education is not “rural” as against “urban”. It is not craft education as against total education. It teaches the value of imparting sound education to children through the creative and productive activities which promote in them qualities of self-reliance, dignity of labour for non-exploitative social order.

The Education Commission agrees “that essential principles of basic education are so important that they should guide and shape the educational system at all levels and yet what the Commission advocated is another form—“work experience”. Introducing work experience at all levels of education essentially means imparting education through socially useful and productive work.

The National Education Conference held at Sevagram in 1972 had brought about a consensus on national education and it emphasised the need to impart education through socially useful and productive work. The recent reform to introduce the 10 plus 2 plus 3 pattern in the states was intended to provide for wider opportunities for the technical and vocational subjects side by side with improvement of quality of education at the higher secondary stage. The emphasis on vocational education in actual implementation is yet lukewarm in many states and a reform envisaged as a mere introduction of two years of higher secondary stage without providing simultaneously and in a wide variety technical and functional subjects will make the remedy worse than the disease.

I again revert to the phrase “rural education”, linked with the change in the system of education as stated above, equally important is the goal for a common school system. Implemented effectively, both in cities and villages this will remove the gap between the rural and urban areas, the gap between classes and masses and a misconceived notion of “rural education” and “urban education”. The positive efforts—to encourage talent research in rural areas, to provide opportunities to weaker sections and students from backward areas by way of liberal merit scholarships and hostel facilities attached to schools and providing bridge across for students from weaker sections and backward areas to enable them to level up with students from areas where better opportunities exist—has to be promoted and implemented with vigour.

As the strategy of science and technology is accepted in national development plans, it is equally important that there is greater awareness of science and technology, not among those who are called upon to use them, but also among citizens generally. This involves two things: to introduce science and mathematics as an integral part of general education

at the school stage and accord high priority to science and scientific research in institutions of higher learning and the other viz, to evolve sound and appropriate technology in agriculture, engineering, industry, and such other fields and to create facilities for imparting training in technology recommended to be adopted.

Efforts should also be made to create scientific temper among the people through the mass media, general and scientific literature. The recent trends in agricultural universities to introduce intensive practical training, to introduce a “earn while you learn” programmes, to involve themselves in integrated rural developmental projects and to impart non-formal education to farmers and their families through Krishi Vigyan Kendras are signs of awareness to take technology effectively to the rural areas and to the masses.

Science education must be given a special slant in school education. At the same time, it is equally important for the universities and institutions of higher learning that with the development of scientific research, they should come forward to bridge the gap of technology.

I may quote here Dr. Malcolm Adiseshiah who has observed that the sciences and technology plan that we have produced for the Fifth Plan is the beginning of the realisation that for us technology is no accident. “It is one of the new institutions which can be used in the battle against under development.” He observed that “this institutionalisation of science and technology in the developmental process means the implantation of science as a native plant in our society and the considered use of technology as the means of achieving the breakthrough which physical and social engineering call for: There is from this point of view one rather larger gap in our current conception of science and technology plan and that is, that it is limited to physical, natural, engineering and agricultural science and technology, leaving an aching void in the conjunctural use of human, social and behavioural sciences and their technologies. This is one grave lacuna in our institutionalisation of science and technology, which our universities and institutions of higher education can help to fill.”

If the universities and educational institutions have to fill this gap, it is not enough to involve social and behavioural scientists in technological research. The scientists cannot get depth or insight in rural problems unless they live and gain experience in the socio-economic situation in villages and rural areas. In fact, this has to come in the younger generation and in the students studying in schools and colleges.

It is here that emphasis on community service and making social and national service as integral part of education at all stages assumes special significance. Involvement of students and teachers and of schools and colleges in community service and in a variety of on-going development programmes in the surrounding areas in the fields of agriculture, industry, social welfare, building construction, forestry, fisheries, health rural sanitation etc will alone lead

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Role of Universities in National Development

R. P. Dore*

Questions about the role of the university in national development are relatively new—much newer than universities. Even when, in the nineteenth century, Britain first became somewhat self-conscious about its universities and went so far as to establish Royal Commissions charged with tentatively questioning their role in society, it was still not against any vision of social “development” that that role was assessed. In Japan establishing its first national university in the 1880s however, the situation was already different. The university, said its foundation law, must assume the function of “teaching and researching into the inner mysteries of, those branches of scholarship and the arts which are of essential importance to”—not society but the state, and the state, moreover, which had adopted “development” through the importation of foreign forms of “civilisation and enlightenment” as a high-priority national goal. By the 1950s and the establishment of a new wave of national universities in the so-called “new nations”, and particularly after the 1960s with the institutionalisation of manpower planning and the doctrine of the “strategic role of middle and high level manpower”, its ability to contribute to national development came to be seen as a central *raison d’être* of the developing country university.

What sort of development?

At that time—in the 1950s and early 1960s—everyone thought he knew what national development meant. There were differences, of course, between those who thought that establishing a classics department and enriching the intellectual life of the country with a leavening of awareness of Greek literature was a high priority part of modernising a country, and those who thought that such endeavours were perhaps best postponed until the engineering and business faculties had done their job of raising the nation’s productivity and incomes—after which one might, anyway, choose to establish departments of Chinese or Muslim rather than Greek or Roman classics. But despite such differences, there was a broad measure of agreement concerning what “development” could be taken to mean. It was a matter of accelerating economic growth in order to reach the levels of the advanced industrial countries as soon as possible; of establishing modern institutions—political, judicial, educational, etc.—roughly of a kind found in the rich countries, and at the same time creating a sense of national pride and identity necessary to sustain the cohesion of a modern state.

In many parts of the world that is still what “national development” is widely taken to mean. There are certain countries—particularly in East Asia and Latin America, though also in West Africa—where there is a general sense of moving along at a quite satisfactory rate towards such goals. But in others—broadly the countries with lower growth rates—there has been some questioning of this early definition of “development”. Even more has that definition been questioned in the rich countries where, after all, theorising about development originally began.

One major cause of that questioning lay in the tensions of slow growth itself. The development strategy generally adopted was what might be called the “bridgehead strategy”. Countries were to be modernised by building little bridgeheads of modernity in what was otherwise a vast sea of “traditional society”—there would be a textile mill or a steel firm, say, of the most modern kind, employing workers whose skills fully equalled those of their rich country counterparts: a modern hospital with all the latest equipment and doctors trained to international standards; a single university whose degrees could be accepted as equivalent to those of foreign countries—a whole modern sector whose inhabitants paid themselves wages which often were closer to those of their rich country counterparts than to the incomes of the farmers and fishermen in the traditional sector of their own society. And steadily, if slowly, the bridgehead would be expanded until the whole of the traditional society was absorbed in the modern sector. The problem was how slowly? How long would a nation wait? The levels of investment needed for that second steel firm, that second hospital, were of a scale which precluded rapid growth of the modern sector.

Meanwhile two factors whose influence had not been fully foreseen intervened to make the situation more complicated. Population growth rates reached a level such that the numbers excluded from the modern sector in many countries continued to grow faster than the numbers inside it. Secondly, the growth on education systems led to an increasing flow of young people knocking at the gates of the modern sector, demanding admittance to organisations which had no openings for them. Because of the vast income advantages of getting a niche in the modern sector (private rates of return to university education of over 30 per cent according to some economists’ calculations, compared with 7 or 8 per cent in the industrial countries) the ambition to do so was strong. And because of the qualification system which the developing countries adopted as part of the

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"modernity" of the modern sector bridgehead, the educational pyramid became almost the sole means of entry into that modern sector. Hence the rush to the schools and the demand for more and more schools—a demand for education which was largely derivative of a demand for jobs. And it did, indeed, prove far cheaper to build schools to qualify people than to provide workplaces to employ the qualified.

It was the growing army of educated unemployed in many developing countries, but particularly in South Asia, which perhaps did most to bring to the forefront the question of the distribution of the gains of economic growth. The gap in incomes and security and prestige and general amenities of life between those in the privileged modern sector and those in the "traditional society" became politically explosive, thanks to the growing army of those who believe themselves to have earned the credentialled *right* to be inside but were still excluded. Frustrations are as much a function of expectations as of experience.

But once the distribution issue was raised, it would not go away. The validity of the whole bridgehead strategy was questioned.

Two other factors fed into that questioning. First, the bridgehead strategy had always been one which assumed the civilisation of the Western industrial countries to be the model of a "desirable society" which all developing countries would wish to imitate. That assumption was a natural piece of ethnocentrism as long as it was theorists in the Western industrial countries who did the strategic thinking. As the social sciences began to develop in Nigeria and Jamaica and Iran and Malaysia, however, they developed their own counter-ethnocentrism, often rejecting in principle the desirability of the social and technological patterns on which the bridgeheads were modelled.

And they were increasingly joined, in the universities of the Western world, by the younger generation of social scientists concerned with Third World questions, who (as their contribution to the radicalisation of academia in the late 1960s) rejected the ethnocentrism of their elders, scorning the notion that the corrupt repressive bourgeois regimes of Europe and North America could possibly provide a model of anything except what to avoid, and adding, further (in the guise of what became known as the dependency theory) that the bridgehead was not only misconceived on wrong models, but actually a bridgehead of Western imperialism, a way in which Western capitalism controlled the industry and the medical and professional services of the new nations in the interests of the rich countries.

Hence much talk of Alternatives in Development. The exact positive shape of these alternatives was often hazy, but the rejection of the bridgehead strategy was clear; development should be in the first place autonomous and created from internal sources under internal direction; it should be nationally integrative not divisive; it should lead to a steady pattern of growth for all sections of the community—incremental improvements in agriculture and handicrafts and not just new steel mills.

What this means in practice, given the sort of hazards which China showed to attend backyard steel furnaces, for example, still remains rather unclear. It is easy to slip from the absurdity of importing expensive labour-saving machinery into countries with an abundance of unemployed labour into the equal absurdity of suggesting that every country should invent the steam engine all over again—or invent something just as good as the steam engine but genuinely Alternative and their own. One symptom of the haziness is the growing prevalence of vapid generalised prescription in writing on development. New so-called strategies are proposed at regular and rapidly shortening intervals and usually prove, on examination, to be redefinitions of the goals government *ought* to pursue rather than any new insights into how governments might successfully pursue them. The adherents of the latest so-called "basic needs" strategy seem, for example, to have a much greater zest for discussing whether or not human right should be included in any definition of the basic needs which all developing countries should seek to secure for their citizens than for nuts-and-bolts investigation of, say, the cheapest ways of ensuring that everyone has pure water to drink, or even of the factors which can successfully inhibit the use of police torture in interrogation.

The relevance of all this for the present discussion of universities is twofold. First, once the old taken-for-granted definition of development that went with the bridgehead strategy was questioned, and the contingency of the concept revealed (i.e., "development" means "movement towards a good society" and every man is entitled to decide for himself what sort of society he thinks good) it has been open to anyone who can speak persuasively enough for his *own* definition of the good society (e.g. Mr. McNamara with the persuasive power of World Bank loans behind him) to set a new dominant fashion. Hence rapid changes in current doctrine and a need to establish, before any discussion of "the role of X in national development", what the latter term should be taken to include. The promotion of a high level of artistic creation, or of universal proficiency in dead classical languages, or two acres and a cow for every family, or the ending of all sexual inhibitions—almost anything can be argued to be, not just a means to, but a part of the very definition of, national development.

The second point is less unsettling. It is that the first of all these recent shifts in the meaning of this protean concept—the shift to a central concern with distribution problems—is also the most fundamental one. It may be that the source of this shift of general concern is to be found in the growing egalitarianism of the advanced industrial societies rather than in any conditions internal to developing countries themselves, but it is one of the characteristics of the "late-developing country", industrialising in a world which already contains advanced industrial powers, that the ideologies of the rich countries penetrate to them too—and there are some fields intimately affecting universities where this shift of concern is already felt, notably the field of medicine.

Suppose that a certain volume of resources can be used to produce 50 doctors qualified to international standards after six to seven years of higher education, who (if they do not then emigrate) will serve the small proportion of the population who live in the capital city and have incomes sufficiently high to afford their services. Suppose also that the same volume of state resources could train 150 medical assistants with two to three years' training, most of whom will go to the villages and be capable of dealing with 90 per cent of the complaints the poor of the countryside suffer from. Which of the two uses of resources should be preferred? A number of countries which once accepted without question the first, the bridgehead strategy, alternative are now beginning to put much greater emphasis on the second, and the desirability of such a move is being strongly urged by the World Health Organization.

Universities, of course, are frequently centres of resistance to such ideas, unless they decide to "join'em" and, however reluctantly, accept the medical assistant courses as proper matter for a university. Either way the shift to distributional concerns frequently does force universities into situations of choice, situations in which they have to evaluate the relative importance to be attached to the various differing functions which universities perform in society. It is to a slightly more systematic survey of those functions that I now turn.

The latent and the manifest

So far I have referred directly to only one "role of the university"—the vocational training of doctors, or more generally the transmission of knowledge expected to be subsequently useful in the work lives of the universities' graduates (hereafter the "knowledge transmission function"). It might be a useful preliminary to further discussion if I try systematically to list some of the other functions which universities have performed to a greater or lesser degree in various societies. (Not "*The role of the University in Society*" which is a meaningless formulation). "Function", of course, begs the question: "function for whom?" I ignore functions in the service of small groups of people (e.g. "to provide incomes for a salaried leisured class of teachers") and list only functions which are of interest to large segments of, or the whole of, a population. Some are very obvious functions, some not so obvious—what sociologists like to call latent rather than manifest.

2. To cultivate the mental skills—reasoning power, power of self-expression, imagination, etc.—of their students irrespective of the subject matter of their study. (Mental development function.)

3. To gain a high reputation in international academic circles (Nobel prizes, etc.) thereby enhancing the status of the country in the international community. (National prestige function.)

4. To symbolise and maintain in the society the respect for intellectual excellence, for truth, honesty, curiosity, beauty, etc., as qualities valued in themselves. (Value-affirming function.)

5. Similarly to sustain respect for other values

which are seen as useful to the society in general, or at least to the particular groups which finance or control the university—patriotism, the work ethic, respect for revealed religion or authority. (Social control function.)

(The line between these last two functions is, of course, dependent on one's point of view. What to some is the consummatory end-in-itself pursuit of truth is, for certain contemporary Marxist relativists, the fetish of objectivity in bourgeois science which serves to mystify and thereby to sustain the hegemony of a ruling class culture.)

6. To provide a home for "alienated intellectuals"—intellectuals who do not automatically accept the values of groups dominant in the polity or the economy, and who, by virtue of that fact, are able to play a constructive role as social critics, capable also of fundamental questioning of the institutions of their society. (Social criticism function.)

7. To do research and to push forward the frontiers of knowledge in materially useful, or otherwise desirable, ways. (The knowledge production function.)

8. To train a new political elite or perpetuate the power of an old one by giving it (a) knowledge, (b) self-confidence, (c) legitimacy in the eyes of the ruled. Perhaps no one would today *primarily* view "Oxford as sharing with Cambridge the special function of completing the education of young men, coming from cultivated homes, trained for the most part in our Public Schools, and destined for political life or the learned professions" as H.A.L. Fisher did in 1919, but that this remains one of its functions few would dispute. (Social order function.)

9. To ration, in a way seen as socially fair and legitimate, licences to perform certain lucrative professions. (As Flexner caustically describes Columbia adapting itself to the State Legislature's shifting definitions of what it was to be optometrist or ophthalmologist with little regard for the actual knowledge requirements of the job). Also, similarly (and of much more importance in developing countries where professionals are more often likely to be organisation employees rather than free-lance operators), to ration desirable employee positions in governmental and other bureaucracies in a way which is seen as fair and legitimate. The disappointed aspirants for the jobs everyone would like can be persuaded that it is their own fault that they fail to get them—because they did not get a good enough degree. Moreover, in the educational system the rejectee can be "cooled out" gradually: hope dies a little when he gets a poorer-than-expected secondary-leaving certificate result, a little more when he fails to get into the best university, and so on. (The rationing function.)

10. To screen "talent"—either by entrance examinations for a hierarchy of quality-ranked universities as in Japan and to a lesser extent in Britain, or by first-class, upper-second, etc., distinctions in graduating certificates. This labelling process ensures that talent is delivered to the labour market in a properly graded form so that the market (according

to economic theory) allocates the best talent to the highest bidder, i.e. in such a way that marginal productivities can be maximised, i.e. in such a way that the best contribution to society will result. The universities, in other words, like other parts of the educational system but at the top end of the range, serve as ability-graders, they identify the "superior man", as Macaulay said—whether by his mastery of Greek, or of algebra or even of Cherokee makes no difference. The extent to which the "superiority" is of intelligence, or of effort, or of what combination of the two, depends on the nature of the tests and the extent to which they rely on memorisation, powers of reason, imagination, etc. (The screening function.)

Which of these functions one thinks important depends on one's point of view; which one thinks of as important for development depends on one's view of development. The remarks which follow are based on the assumptions that:

1. One important part of everyone's definition of development is an increase in society's economic efficiency and hence its income.
2. The effectiveness with which universities perform three of these functions is of particular importance in that regard: (i) the knowledge transmission function, (ii) the screening function, and (iii) the mental development function.
3. These last three functions are listed in *ascending* order of importance. People can, and mostly *do*, learn on the job (the proliferation of pre-career qualification courses in optometry or librarianship or marketing or whatever has as much to do with the rationing function as with the knowledge transmission function). As for screening, with suitable promotion systems and labour markets people *can* be sorted out for talent in the course of their work careers; there is absolutely no reason why it has to be decided at age 18 that a man is top level executive material, or merely suited to clerical functions. But if the "mental development function" is badly performed at the university, if men and women come out of the university not with a cultivated curiosity and a desire to go on learning for the rest of their lives, but with a deep sigh of relief at having completed 16 joyless years of certificate-chasing, entitled at last to collapse exhausted on the bottom step of some automatic-promotion escalator, liberated for ever from all the tedious, anxious rote memorising rituals which have dominated their lives hitherto—if that is the way in which the mental development function is performed for a large proportion of a university's graduates, it is unlikely that the damage can be undone, and social stagnation is more likely to result than national development.

And how well is the mental development function performed? Increasingly badly is my impression, and I would attribute that to the increasing dominance of

the rationing and screening functions. All advanced industrial societies have seen a steady increase (a) in the number of job opportunities for which educational certificates are required, (b) in the organisational structuring of careers—more people staying in single organisations for the whole of their working life so that consequently the first job increasingly determines the whole career, and (c) an increase also in the level of schooling made a prerequisite for job entry. Professions which 50 years ago could be entered as an apprentice at the age of 15, and which required A-level certificates 30 years ago, now require a degree. More and more people, consequently, are in higher education *faute de mieux*, because they "need the piece of paper", not because of any love of learning, not, even, because they think they are getting the knowledge to do a job; merely to earn the right to *get* a job—not to *improve* themselves; only, in the examination, to *prove* themselves.

Hence a decline in the quality of education, in particular in its performance of the mental development function. That decline is threatening enough in the rich countries; the danger is even worse in the developing countries for a variety of reasons, the chief of which, probably, is the overwhelming dominance of the rationing function as a direct consequence of what was called the "bridgehead strategy". In societies with a small modern sector relative to the total economy, it is common for the whole educational system to revolve around the ladder into the university and an assured job in that modern sector. The rural primary school is only the first rung of a long ladder. Those who ought to leave school proudly with a primary leaving certificate are called the "dropouts" who failed to pass secondary entrance; the secondary certificate is not seen as a measure of accomplishment, but as another difficult hurdle on the route to university. Because the prizes are so glittering and because they are so scarce, the select few who arrive at the university do so with their examination-orientation so deeply engrained that only the most dedicated of teachers can fire them with some intrinsic interest in the subject, unalloyed by thoughts of how much it is necessary to know to do well in the exam.

Reports from many countries suggest that the problem is serious. And as universities increasingly fail to fulfil their mental development function, so their knowledge transmission function becomes less and less relevant, so their capacity to sustain excellence, to produce relevant research results or to offer the society convincing and intelligent social criticism declines also. It is all the consequence, it seems to me, of the universities—of the educational system as a whole—having to bear the whole burden of the screening and rationing functions *as well as* the mental development and knowledge transmission functions in situations where the intensity of competition is such that the first two are bound to swamp and vitiate the last two.

And if it is only the screening and rationing that the universities do well, one is bound to ask whether they are not an extraordinarily expensive way of doing them. Relative cost figures are well known. One

student-year at a university can cost anything from 30 to 200 times the expense of one pupil-year in primary school. At a time when the bridgehead strategy is being generally questioned and all development questions viewed from the distribution point of view, such differentials cannot indefinitely go unchallenged.

Universities, nevertheless, *like* to perform those screening and rationing functions. It gives them power. To reserve privilege for the qualified gives authority to those who can give and withhold qualifications. But they are wrong. Universities will be better able to cultivate minds and spirits, to contribute to increased economic efficiency, to promote intellectual excellence, if they can extricate themselves as much as possible from the rationing function. Let them, to start with, refuse to give any of the sort of certificates which would be used as proxy measures of "general ability". Let their societies seek other ways of deciding who is entitled to what job. The next step towards stripping the universities down for useful action would then be easy. If certificates were no longer formal prerequisites for jobs we would be able to see how much of conventionally established *pre-career qualifying* courses—for accountants, for nurses, for teachers, for real estate agents—were primarily for screening and rationing purposes, how much they were for essential knowledge transmission purposes and need to be retained as such—but not necessarily as pre-career, perhaps as recurrent mid-career upgrading, courses. New career structures could emerge; all civil servants, for example, might start as clerks, the more able ones being promoted to higher ranks and having the opportunity of higher education to prepare for it. Doctors could start as medical assistants, with the most successful going on for further training. Universities and other institutions of higher education would have a much better chance of contributing to the development of human minds and spirits if they were *not* in the business of handing out tickets-of-entry to job competitions, but instead giving vocationally useful knowledge to those already assured of a chance to use it, or just knowledge and skills and ideas to those who wanted them for their own sake.

No society in history has ever seriously tried this solution—yet. The Australian civil service experiment in exclusive reliance on internal promotion was doomed to failure because no single organisation can hope to entrap its fair share of the nation's talent if the traditional university route, offering far wider options, remains as an alternative. The experiment, to be a real experiment, must be across-the-board. In China, after the Cultural Revolution, it *was* across-the-board. Unfortunately—partly because they stumbled into it for the wrong reasons—the Chinese perversely chose to make it as difficult as possible to make the experiment successful. First, they failed to institutionalise the initial allocation of entry chances into work organisations in a way that would be considered fair. Secondly, there was a similar failure to institutionalise the chances of later promotion and access to further education in a way that could eliminate corruption and be accepted as fair nor—thirdly

in a way that ensured the best distribution of talent (partly because of an ideological prejudice against recognising the importance of innate differences of talent). And fourthly, they carried through the experiment at a time when the teaching force was demoralised, and fearful of any suspicion of ideological deviations. It was thus wholly incapable of the innovation required to create a whole new pedagogy which could persuade young teenagers to study, *not* in order to compete for careers, but for the pleasure of mastery, or from curiosity, or because they recognised that what they were being taught was potentially useful. So this experiment, too, became one of the sins of the "Gang of Four".

But that the Chinese experiment did fail is not to say that a similar attempt to restructure the whole relationship between education and careers might not, if it were conducted under very different constraints, have very different chances of success.

Such a restructuring would entail, doubtless, a reduced role for universities and smaller budgets. Doubtless so. And perhaps that would be no great disaster. It has rarely been thought, for example, that the value-affirming function of universities, the way they perform their task of sustaining standards of excellence, is directly related to the size of the university sector—or even to per capita budgetary endowments. In any case our concern with excellence in universities is a somewhat parochial concern. As academics, obliged to read the scholarly output of our colleagues, the end-in-itself excellence of that output is a matter of some concern, but that is surely, not even for us in academia, the only form of excellence that counts. Quite apart from one's dependence on various forms of socially useful excellence—in, say, the organisation of British Rail—even thinking only of those end-in-themselves kinds of excellence the savouring of which enhances the quality of my life, there are, for instance, the anecdotal skills of accomplished raconteurs, the skills of the outstanding committee chairman who can round off a meeting in half an hour that others might let run on for two, the talent of the film director, the concert pianist, or the television debater. None of these forms of excellence owes much to university or any other kind of formal training; they are forms of excellence developed primarily in the world of work.

Universities can best contribute to raising standards of excellence in the world of work—i.e. contribute to national development—by sustaining ideals of craftsmanship, honesty, conscientious performance, intelligence and attachment to ideals other than one's own personal self-advancement. And they can best do that if they resist being overwhelmed by the pre-occupations which derive from having the screening and rationing functions imposed upon them—if they set their face against continuing to make "easy profits" out of the false importance that those screening and rationing functions give them, and press their societies to rethink the distinction between "getting educated" and "getting qualified" and to rebuild their institutions accordingly. □

Development of economically viable technology stressed

Excerpts from the convocation address delivered by Dr. P. C. Chunder, Union Education Minister, at the Indian Institute of Technology, Madras.

You must not forget at this stage that this celebration marks the end of only one stage in your learning. Knowledge today is growing at a rapid pace. If you do not strive to learn after going out of this function, you will soon find yourselves out dated. I do not believe that success in life is what you should primarily aim at. It is the work well done that matters. Success, if it comes incidentally, is welcome. You will have to prove yourself worthy. You will not get far by playing for safety. The professional world today has little use for those whose main concern is with hours

institutions of this kind. The students who had the benefit of instruction in this institution, must not forget the contribution by these poor but hardworking persons, but should acknowledge their gratitude by serving the nation effectively and provide their expertise for the development of the nation.

We are all well aware of the political developments through which the country has passed during the last year. The massive mandate which the people of India have given to the present Government in the last general election is a clear manifestation

efforts to train a large number of people in science and technology in order to foster economic well-being. Gone are the days when higher education could be organised to cater to a select few among the elite. There has been an increasing demand from every corner for providing greater avenues for pursuing technical education. Side by side, there is the spectre of unemployment. We therefore decided to identify deficiencies in the present system and spell out the direction of action for future development of the important field of education. For this purpose, we had set up a working group of the All India Council for Technical Education to review the progress and present status of technical education at all levels and suggest reorientation and improvements to the existing programmes. The findings and recommendations of this Working Group are of great significance in the present context and I propose to discuss them briefly.

Even after 25 years of planned development, we find that there is widespread unemployment and under-employment. It has generally been accepted that the greatest of all resources is education: but with the spread of education we find a paradoxical situation in that the mounting unemployment among the educated is a hard reality. Rather than providing a means of livelihood, education is often leading only to frustration. Furthermore, the past efforts have benefited only a small section of the people. It has left the vast majority, especially those living in villages, untouched. During the last few years, while the per capita income of the nation was going up, the per capita income in the agricultural sector was going down. This position is to be taken note of in planning for the future.

Schumacher, a well known economist while discussing the effect of adopting the Western technology by the developing countries rightly observes:

"As Gandhi said, the poor of the world cannot be helped by mass production, only by production by the masses. The system of mass production, based

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of work and security of job, salary and pension. Unless there are compelling reasons to the contrary, it is always better in your younger days to head for new avenues than to play for safety. It is better to choose an employment that will give you chance to grow with the years rather than one which has little to offer except security.

Among the visitors there may be many parents and other relatives of the young graduates. In spite of the fact that the Government is spending crores of rupees on higher education, there are many parents who had to make sacrifices to send their children for education at Institutes of this kind. Yet the peasants in the field and the workers in the factory had contributed to the public exchequer which in its turn finances

of the desire of our people for a reshaping of our policies with a view to bringing about the benefits of a welfare state without inordinate delay. Our Government is determined to accelerate the pace of educational progress by placing greater emphasis on adult education, universalization of elementary education, non-formal education and vocationalisation of secondary education. Technical education would, however, continue to receive the necessary attention.

To an audience like this, it is hardly necessary to stress the point that the most important characteristic of the last quarter of the 20th century is the acceptance of science and technology as the major tool for the economic well-being of any society. This acceptance has resulted in massive

on sophisticated highly capital-intensive, high energy-input dependent and human labour-saving technology, presupposes that you are already rich, for a great deal of capital investment is needed to establish one single work-place. The system of production by the masses mobilises the priceless resources which are possessed by all human beings, their clever brains and skilful hands and supports them with first-class tools. The technology of mass production is inherently violent ecologically damaging, self-defeating in terms of non-renewable resources and stultifying for the human person. The technology of production by the masses, making use of the best of modern-knowledge and experience, is conducive to decentralisation, compatible with the laws of ecology, gentle in its use of scarce resources and designed to serve the human person instead of making him the servant of machines."

How right he is in his observations! I am happy that several of our technical institutions have realised the necessity to adopt a form of technology suitable to our situation and our environment. We have understood that nobody else can solve our problems, no strategy adopted in any other country will be straightaway suitable for our country. We have to face our challenges by developing strategies of our own. Therefore it has become an urgent necessity to promote transfer and adoption of technology. The Institutes of Technology can contribute substantially in this effort. They have to realise that if they are to serve the country they must be close to the native soil, to the poor and needy. They must realise that an important duty of technical education institutions is the development and popularisation of economically viable technologies, which can help utilise the locally available resources in terms of men and material. I am indeed happy to learn that this institute has established a Rural Development centre for this purpose.

One problem that is drawing the attention of everybody both in the developed and developing countries is the location and exploitation of energy sources. As we all know, the available energy sources such as fossil fuels are limited in extent. They are non-renewable. The developed nations are using up the reserves at an alarming rate. More alarming is the rate of increase in their requirements. The developing nations will scarcely be able to compete with them in paying for the costs of these fuels. Even the developed nations have started looking for other unconventional sources of energy such as nuclear energy. But exploitation of nuclear energy is associated with highly radioactive wastes. The procedures for safe disposal of such wastes are yet to be evolved. The problem of pollution is becoming large not only in the developed countries but also in developing countries like ours. Lastly, dependence on fossil fuels, nuclear fuels etc., which are non-renewable will not solve our problems because these fuels are likely to be exhausted sooner or later. We should, therefore, aim at depending only on renewable sources of energy. That naturally turns our attention to the utilisation of solar, wind, wave and tidal energies. We have also got to find ways and means of utilising the wastes in our system. A beginning has already been made in design and construction of solar stills, wind mills, biogas plants etc. I recommend that this institution increases its activities in this direction and brings about a speedy change-over to utilisation of renewable energy sources, a source flexible enough to lend to decentralisation.

The ocean has always been a source of wealth but its economic possibilities have multiplied with the development of science and technology. The proposed changes in the Law of the Sea at the international level are likely to bring within our exclusive control an economic zone of two hundred miles from the shore. This new gain is expected to open up endless opportunities for exploiting the rich resources from the ocean,

provided our technology can keep pace with the newer demands in this matter. This institute, I hope will pay adequate attention to all aspects of the problems concerning the exploitation of the ocean to enrich the future economy of our country and better the living standards of our people.

Personal

1. Mr N.S. Mathur has been appointed Vice-Chancellor of G. B. Pant University of Agriculture and Technology.
2. Dr Devendra Sharma has been appointed Vice-Chancellor of Indore University.
3. Mr B. S. Somasundaram has been appointed Vice-Chancellor of Annamalai University.
4. Prof. D.N. Pathak has been appointed Vice-Chancellor of Saurashtra University.
5. Dr T. B. Mukherjee has taken over as Vice-Chancellor of Patna University.
6. Dr V.P. Pande has taken over as Vice-Chancellor of University of Saugar.
7. Prof. R. G. Takavale has taken over as Vice-Chancellor of Poona University.
8. Mr. A. Venkataraman has been appointed Vice-Chancellor of Tamil Nadu Agricultural University.
9. Prof. Smt. Nilima Dutta of Gauhati University has been invited to attend the World Congress of Philosophy being held in Dusseldorf (W. Germany).
10. Prof. Alladi Prabhakar, Principal, College of Engineering, Osmania University, has been invited to give seminar lectures at the State University of New York at Buffalo and at the Concordia University at Montreal (Canada).

IAUP holds international conference in Tehran

IAUP International Conference on National Development and World Peace through Higher Education was held recently in Tehran. About 200 eminent persons including the University Presidents, Vice-Chancellors and experts from 49 countries attended the conference. IAUP Conference constituted a special group of experts to discuss various aspects of "the role of higher education in national development and world peace" in detail. The group consisted of Dr. Steward E. Fraser, Dr. James T. Hamilton, Dr. Ran Soo Kim, Dr. Sun Ha Kim, Dr. Kermit C. Parsons, Dr. Ida Long Rogers, Dr. G.D. Sharma and Dr. Joseph Katz. The following recommendations were made:

1. Universities need to promote interdepartmental co-operation within their institutional structures; to further interdisciplinary studies; to encourage cooperative endeavours with community organizations; and, to provide society with an example of how a group of scholars are able to create and conduct an exemplary community;
2. Universities and colleges need to introduce and develop international perspectives in all aspects of higher education curricula; to promote the preparation of books on international socio-economic and political systems written from the point of view of particular countries.
3. Higher educational institutions need to facilitate integrative approaches to all theoretical and practical programmes of study; to establish parity of esteem as between pure and applied studies, and among humanistic, scientific and technological studies;

4. Communities must maximize equal access to higher education for all qualified students while at the same time balancing excellence with equity; quality and quantity need to go hand in hand;
5. Universities need to be much more responsive to community needs than has been the case in the past; a responsive community is a responsible community;
6. Universities need to inculcate in their students a sense of responsibility for community development both at home and abroad;
7. Universities need to promote voluntary study service programmes for rural and urban development with a view to facilitating the internalization of the human values of cooperation and

commitment and to do so for all students;

8. There is need for higher educational institutions to promote further international exchanges of students and faculty for research, teaching and community development with particular emphasis upon exchanges among universities of developing countries;
9. Developing countries need jointly to establish information and communication centres in universities around the world to disseminate information about themselves; universities in developed countries need to assume a measure of responsibility for the conduct of those centres;
10. Centres of world education, whether peace research institutes, or international relations study centres or along the lines of the Korean centre for the Reconstruction of Human Society should be established in universities which centres have as their prime task the study of the resolu-

(Continued on page 1141)



Dr. G. D. Sharma making a point at the Expert Group meeting of the IAUP Conference.

Industry-University collaboration vital

The Union Minister for Petroleum, Mr. H.N. Bahuguna while inaugurating the seminar on 'Industry University Collaboration in Chemical Engineering' at the Indian Institute of Technology, Madras pleaded for elimination of difficulties in mobility between industry and universities and between university and the policy making authorities.

He said there is an urgent need for a re-appraisal of our present system of educating engineers and wanted the attention to be paid to updating the engineering curriculum of academic institutions as also the other institutions involved in training of technicians to meet the new needs and rapid

education and research were not attuned to the requirements of industry. One way to remedy this situation would be for the teaching and research faculty to be associated with industry, thus building a bridge between industry and universities and creating an atmosphere of mutual trust and confidence in each other's potentialities. He referred in this connection to a proposal for inducting academicians on the boards of public sector units.

The Union Minister expressed his doubt whether the engineer graduating today was well equipped for the tasks, which would confront him in the next five years or a decade; it was still more

were made in the IITs and some other educational institutions much remained to be done with the active cooperation of industry.

Prof. R.G. Narayanamurthi, Director of the Institute said the Government of India had chosen the Institute for locating the Curriculum Development Centre in chemical engineering education in the country.

Prof. M.S. Nadkarni, Chairman of the Indian Institute of Chemical Engineers, said education planners were confused as to the diverse needs of industry and how to meet them. Industry and education planners should find a way out of this impasse. Industry should take a lead by establishing its own research development organisations to keep pace with competition. Industry, the Government and the universities might consider the need for setting up an Institute of Continuing Technical Education to impart advanced technical knowledge to engineers employed by the universities.

Prof. Hans Wagner, Adviser to the Industrial Consultancy Centre at the institute gave a glimpse of the German and Indian scenes in industry-university collaboration. He said a survey conducted last year to analyse the university-industry collaboration indicated that productive cooperation between the two was feasible on a much larger scale.

Stress on co-curricular activities in universities

Dr L. S. Negi, Vice-Chancellor of Himachal Pradesh University addressing the meeting of the University Sports and Co-curricular Activities Council in Simla stressed the need for giving more attention to sports and co-curricular activities in the universities. He said sports and co-curricular activities were an integral part of education and should receive the same attention as was given to other subjects. Such activities go a long way in inculcating among the students a spirit of unity which is required in building up a strong nation. He said these activities help in developing the personality and channelising the energy of youth to cons-

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developments in the existing disciplines.

Mr. Bahuguna suggested placements of academicians in working positions in industry for reasonable period. It was equally necessary for universities to draw faculty from industry, not necessarily permanently but for specified periods. The university acting as a catalyst should not only make an impact on its environment but also devote itself to the task of bringing about social change and economic development by inculcating in students, excellence in technical and managerial skills, constructive attitude and purposeful leadership concepts.

Mr. Bahuguna felt there were some serious gaps in the understanding between institutions engaged in engineering education and industry, of the needs of each other. This was evident from constant criticism that engineering

doubtful in the case of an engineer who had graduated five or 10 years ago. Engineers and technicians therefore should be exposed to more recent trends in specific areas of their profession. Professional bodies, in conjunction with educational institutions were organising refresher courses for practising engineers for broadening their knowledge but this touched only a fringe of the problem.

The processes developed in universities, IITs and national laboratories were made known through various channels but they were not exploited commercially to the extent possible. Exchange of personnel on a larger scale between universities and industry would certainly help in identifying the problems of industry and universities and technical institutions could work in solving such problems. He said though attempts

tructive programmes.

The Vice-Chancellor pointed out that on international level our standards in games have not shown good results. Efforts have therefore to be made to regain efficiency in these spheres at the university level.

The Vice-Chancellor suggested a joint body of Government and the university to consider matters relating to sports and co-curricular activities to ensure the proper training of youth to achieve distinction in sports.

Dr. Negi disclosed that an indoor stadium would be built up soon at the university campus. He said instead of applying our mind to all the games in an unscientific manner, it would be better if we concentrated on few games for which the talent and the facilities were easily available.

Dr. Negi suggested that the Executive Committee of the sports & co-curricular activities should meet more often to consider all the suggestions as were made by the members of the Council for improving the standard of these activities.

The Vice-Chancellor said the university had recently appointed coaches for different games and their services would be made available on request to the colleges for providing training to the students. He said merely asking for more funds will not help in improvement of standard. It would require a missionary spirit and enthusiasm on the part of those interested in sports & co-curricular activities.

Strengthening of farm varsities suggested

The Union Minister for Agriculture and Irrigation, Mr. Surjit Singh Barnala has invited the comments of the State Chief Ministers on the recommendations of the Randhawa Committee Report to ensure a sound organisational set up and adequate financial support to the agricultural universities. He said the Central Government proposes to discuss with the State Governments the detailed recommendations made for strengthening and improving the functioning of these universities. The State Govern-

ments have therefore been requested to examine the report in depth and send their suggestions to enable the Centre to process the recommendations speedily.

The Agriculture Minister said the agricultural universities can play an effective role in transforming rural India in the context of new priorities if they are organisationally and financially sound to plan their research, teaching and extension activities keeping in view the local demands.

The Prime Minister at his recent meeting with the Vice-Chancellors of these universities had also highlighted the role of these universities in the service of the community.

Communications school proposed for Kerala

Kerala University is planning to set up a full-fledged School of Communications for training in journalism.

Prof. B. S. Thakur, Head of the Journalism Department of Panjab University and Chairman of the Expert Committee appointed to prepare details of the project said the proposed School would be primarily responsible to train journalism teachers. At present there is a dearth of qualified and trained teachers in this field and many departments in the universities are under-staffed.

Prof. Thakur said that the Expert Committee had recently met the Kerala Chief Minister and several media men and educationists in the State to prepare the plan. He said the consensus was for an autonomous Institute with a link with the university.

The University Grants Commission has also appointed a committee to suggest ways to modernize the curriculum and training programme in mass communication in the universities. The Committee is headed by Dr. K.E. Eapen of Bangalore University.

Chandrasekhar Varsity conducts probationers training

The Chandrasekhar Azad University of Agriculture and Technology, Kanpur is hosting fortyeight IAS and PCS probationers at its Kanpur campus

under a training programme in the methods and techniques of agriculture and animal husbandry.

During the two-week programme the probationers will be acquainted with the important aspects of various agricultural programmes like rural development, small farmers development, farm labour, welfare programmes, green revolution, technologies of cereals, pulses, oilseeds and cash crops, cultivation strategies increasing farm production, animal production and horticultural production. The trainees will also have a chance to visit the other veterinary campus situated at Mathura where they will collect knowledge on animal nutrition, poultry, cattle diseases and the measures for their control.

Call for low cost farm technology

Mr. K. Anantha Reddy, Chairman of Telengana Development Board addressing the valedictory function of the ten-day National Service Scheme camp organised by the Andhra Pradesh Agricultural University called for evolving a low cost farm technology suitable to small and marginal farmers for easy adoption and higher returns. Mr Reddy explained the disadvantages to farmers for adopting the advanced mechanical technology and crop production methods. He appealed to the agricultural specialists to strive hard for transferring new knowledge for effective implementation of the scheme of small farmers. He expressed great concern over the rural indebtedness and economic inequality among farmers and stressed the need for introducing an agricultural system aimed at their prosperity.

Mr. B. Ramalingam, Divisional Revenue Officer of the State exhorted the students to work hard with a spirit of dedication, enthusiasm and zeal and appealed to them for the overall development of the rural area.

One hundred fifty students and faculty members of the Rajendranagar agricultural complex of the university participated in the camp and educated farmers about various technical farm operations.

IIT works on solar energy devices

The Indian Institute of Technology, Madras is engaged in a collaboration project on the development of solar power generators and other devices. The generators are designed to supply power for community use to cluster of villages for lifting water to overhead tanks, running a few street lights, a television set and such other uses.

The IIT has been experimenting on solar energy devices even before the oil price hike hit the world and spurred the advanced countries to develop know-how in the use of alternative renewable energy sources like wind, solar, geothermal, ocean tide and ocean thermal gradient power.

A solar distillation plant with a capacity of about 500 litres a day designed by the Institute supplies drinking water to the scientists, students of natural history, tourists and others visiting the islands of Rameswaram.

The Institute has come up with many appliances including cookers, waterheaters, dryers for agricultural and industrial purposes and stills for distilling sea or brackish water, all using low-temperature technology.

The institute has also designed a solar air-conditioner suited to hot and humid climate where dehumidification is essential. It works on the principle of chemical dehumidification (using calcium chloride) and cooling by evaporation. This can be used in big buildings.

Mr M.G. Gupte, Professor of Mechanical Engineering and Head of the Solar Energy Division at the Institute feels that a country like India which badly needs power and perhaps has the lowest energy consumption per capita is not using technology already at a high stage of development in the low-temperature field to raise the standard of living of the people residing in the rural area. He thinks the apathy among industry towards solar devices can be

contributed to the initial high cost, intermittent supply and the diffused and low potential. Dr Gupte has urged the Government and public sector undertakings to instal these devices in their buildings and create a confidence among people. He has suggested that suitable subsidy may be offered by these institutions for encouraging use of solar energy. Dr Gupte asserts that ultimate viability of solar energy devices in the country especially rural electrification cannot be doubted.

Agriculturists to teach farm students

Most of the agricultural universities have accepted in principle the suggestion of the Indian Council of Agricultural Research to involve working farmers in their teaching programmes, especially for imparting practical training to students. The farmers will serve the universities as "academic associates".

Some of the universities have already initiated the process of identifying suitable farmers who can function as academic associates. The Gujarat Agricultural University has taken a lead in this matter and has nominated fifty farmers for training B.Sc. students.

The university education in agriculture at present is said to be theory oriented. The Review Committee headed by Dr M.S. Randhawa had observed in its report that any agricultural universities did not have effective programme of practical training. The report observed that the graduates of these universities are not fully equipped with the practical knowledge of field operations in agriculture. They get only a broad exposure to field operations as per the committee remarks.

The Indian Council of Agricultural Research scheme for appointing working farmers as academic associates aims at improving the

quality of practical training in the agricultural universities besides enabling the students to learn from the successful experience of farmers. The academic associates are also expected to serve as a link between agricultural universities and villages.

Seminar on Question Banks

Prof Satish Chandra, Chairman of the University Grants Commission while inaugurating the 'Workshop on Question Bank' in Gauhati University said the question bank is a means to an end for better understanding of the subject as well as for full familiarity with the questions that are likely to be set in an examination. He said the question bank ought to cover all aspects of the subject so that a student gets comprehensive knowledge. He stressed the importance of revising the question bank at an interval not exceeding three years to avoid stagnation in syllabus.

Dr H.K. Baruah, Vice-Chancellor of the University stated that the university had undertaken examination reform since 1963 and had accepted the principle of having question bank at the pre-university and degree levels. The question bank at pre-university level was put into operation during 1977 and continued in 1978. He informed question banks at the degree level are under preparation and yet to be implemented. He said reforms in the classroom teaching were equally important as the reforms on examination.

Dr K.C. Bhattacharyya, Registrar of the University said the workshop would go a long way in formulating policy matters in regard to placing the examination reform on a sound basis.

Osmania proposes new courses

The Osmania University is introducing practical course in production engineering as a specialisation in its mechanical engineering programme at degree level.

To narrow the gap between theory and practice, the new course is being introduced with 28 weeks practical training for

students in industry. To meet the requirements, the syllabi and curricula of the course have been suitably changed to give a greater practical bias. It includes introduction to all modern manufacturing processes, numerical control and special purpose machines.

According to the new scheme, the fourth-year mechanical students will branch off to specialise in production engineering.

The Institute of Correspondence Courses of the University will introduce Telugu as medium of instruction for its B.Com course from the current academic year.

The Institute will conduct a re-structured B.A. course with rural banking as an optional subject. The course being practice oriented, admissions will be restricted to those who are working in state or central financial institutions, banks and Life Insurance Corporation.

Productivity improvement in university administration

The Panjab University has constituted a Productivity Services and Training Unit which will comprise the Registrar, management consultants with experience in productivity services and teachers of management and public administration. Initially the unit will undertake surveys in different-administrative units of the university office with a view to demarcating major areas for improvement and developing certain broad approaches which can be adopted within the constraints of available resources. In order to make productivity improvement an exercise in which the executives of the university can be involved in a meaningful manner, the unit organised a short course on 'Improving Office Skills in the University'.

Prof R.C. Paul, Vice-Chancellor, Panjab University, while inaugurating the training course, said that science and technology had made a rapid stride and have created a deep impact on almost all facets of man's life. It was essential for those engaged in various types of services to keep pace with these changes so as to live up to the demands and expectations of society.

During the course of the programmes, the participants were exposed to elements of productivity techniques and were asked to identify problems which could be tackled in their own work situation. The participants working in groups will work on these problems for a few weeks and would develop action-oriented programmes for improvement of office productivity.

The unit proposes to conduct on a regular basis a series of short programmes on specific subjects during the current financial year. The focus of these programmes will be improving speed and effectiveness of decision making at all levels.

Science Academy Awards—1978

The Indian National Science Academy has announced the awards for young scientists for the year 1978 in recognition of their achievements in different fields of science and technology.

The award carries a cash prize of Rs 1,500 and a research grant of Rs 5,000 from the Kothari Scientific and Research Institute of Calcutta. The awards will be presented in January 1979.

The award winners are: Dr Praveen Chaddah of Bhabha Atomic Research Centre, Bombay; Dr. (Mrs) Renu Khanna Chopra of Indian Agricultural Research Institute, New Delhi; Dr K.C. Das of Indian Institute of Technology, Kharagpur; Dr A.R. Datta of Bhabha Atomic Research Centre, Bombay; Dr Vinay V. Deodhar of Tata Institute of Fundamental Research, Bombay; Mr S. Easwaramoorthy of Sugarcane Breeding Institute, Coimbatore; Dr Chunilal Ghosh of Bhabha Atomic Research Centre, Bombay; Dr Jitendra Nath Goswami of Physical Research Laboratory, Ahmedabad; Dr S. Ramasesha of Indian Institute of Science, Bangalore; Dr H.A. Ranganath of Zoology Department, University of Mysore and Dr Kalidas Sen of the Department of Chemistry, University of Hyderabad.

PGI & PAU to collaborate

Dr Jaswant Singh Neki, Director of the Post-Graduate Institute of Medical Education and Research accompanied by a team of professors visited the Punjab Agricultural University and discussed possible areas of collaboration between the two institutes. Both the institutes will extend their laboratory facilities as well as technical know-how to each other on subjects such as micronutrient deficiency, testing of toxic effects of drugs, diagnosis related to common ailments in cattle and human-beings, nutritious kitchen gardens, herbal gardens, etc.

Possibility of collaboration between the departments of sociology and psychology was also explored by Dr Neki with Dr A.S. Kahlon, Dean, College of Basic Sciences & Humanities at PAU.

It is for the first time that an exercise in identifying the areas of collaboration between the two major institutes of the State has been taken up which will go a long way in improving the quality of research in these areas.

Osmania to restructure courses

Prof. G. Ram Reddy, Vice-Chancellor of Osmania University said in Hyderabad that the University has taken up the programme of restructuring the courses at degree level to make them relevant to rural environment and developmental needs of the community. He said the revised courses would be implemented in four or five affiliated colleges located in districts from the current academic year. The programme will be implemented in a phased manner.

The Vice-Chancellor said that it has been recommended that the students opting for restructured courses would also become the volunteers of National Service Scheme. This would mean integration of service concept in curriculum.

Prof. Reddy said that the key concept of restructuring the courses was to model the existing conventional subject courses at the first degree level by courses

comprising two of the existing subjects together with a third subject being oriented towards field or practical work or having bearing and direct relevance to the local or regional needs and requirements.

The Vice-Chancellor said that during the academic year, it was proposed to introduce dairy science, fisheries, forestry, catering technology, rural banking, office management and non-formal education in restructured courses.

The University Grants Commission has come forward to assist the college upto Rs 1 lakh per annum.

Prof. Reddy said that university was planning to develop extension programmes on priority basis giving it the same status as to the research and teaching programmes. The university would assume extension work as the third important responsibility.

He said at the recent Vice-Chancellors' conference, it was decided that extension activities should form part of the academic programmes. The expertise on the subject was available in the colleges but it was not being used properly. The Vice-Chancellor said the expertise could be tapped through extension programmes.

Research programmes that contribute to social development especially to rural development, would be encouraged. While fostering knowledge in science and technology at the highest theoretical level and spreading it in the rural areas there was urgent need to develop technology relevant to emerging national needs.

The Vice-Chancellor said that soil health care project, fisheries project, gober gas plant, rural artisan project, adult education programmes, establishment of growth centres for youth and women in villages are proposed to be taken up as extension programmes in the colleges of the university.

Technology for development

The preliminary meeting of the UN Conference on Science and Technology for Development be-

ing held in Geneva will discuss the appropriate technology and information systems network for developing countries. The Advisory Committee on the Application of Science and Technology to Development (ACAST) will examine the report concerning obstacles in the application of science and technology for developing countries and the UN policy on science and technology.

India is being represented in ACAST by Prof. M.G.K. Menon.

The main objectives of the conference are:

To adopt concrete decisions on ways of applying science and technology in establishing a new international economic order;

To strengthen the technological capacity of developing countries so as to enable them to apply science and technology for their development;

To adopt effective means for utilization of scientific and technological potentials in the solution or problems of development of national, regional and global significance, especially for the benefit of developing countries;

To provide instruments of co-operation to developing countries in the utilization of science and technology for solving socio-economic problems that cannot be solved by individual action in accordance with national priorities.

ACAST session will also examine the feasibility of a pilot network for information systems in the field of science and technology to strengthen the technological capacity of developing countries.

Roorkee proposes degree course in paper technology

The Roorkee university will be the first university in the country to introduce a degree course in pulp and paper technology. The university proposes to take over the Saharanpur Institute of Paper Technology. The Institute which was conducting diploma-level course will now run a regular course of instruction and training leading to the bachelor's degree in pulp and paper technology.

The Institute is being staffed properly in order to upgrade it to the university standard. The candidates who qualified for admission to the Institute in the last admission examinations have been asked to opt for the new degree course.

A five-year plan involving an expenditure of Rs. 70 lakhs has been proposed for arranging the university level training at the Institute. The Institute will continue to conduct the certificate and diploma courses simultaneously.

Awards to eminent scholars

The President, Mr Neelam Sanjiva Reddy presented certificates and robe of honour to five Sanskrit and one Persian scholars at an investiture ceremony in New Delhi.

Dr Ananta Tripathi Sarma of Orissa, Pandit Bipin Chandra Goswami of Assam, Dr Gauri Nath Sastri of Calcutta, Mr Kailashnatha Balasubramanya Sastri of Tamil Nadu and Mr Panchangam Lakshminarayana Upadhyaya of Karnataka received their awards for their contribution to Sanskrit.

Dr Nazir Ahmad of Uttar Pradesh received the certificate and the robe of honour for his contribution to Persian.

Mr Erkara Raman Nambutiri and Dr Shamsheer Bahadur Samdi received their awards in absentia.

IAUP Conference

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tion of value conflicts; the reduction of the gap between words and deeds; the relationship of the material and spiritual dimension of life; the best way in which to educate youth to assume responsibility for a life characterized by goodwill, service and cooperation (G.C.S.) and to promote these centres in both developed and developing societies.

These recommendations of the expert group were accepted by the plenary session of the Conference.

BHU proposal for students counselling

Banaras Hindu University proposes to adopt the scheme on student counselling as an integral part of the university activity. The objectives of the schemes are to extend proper advice to students to derive the maximum advantage from the university education, to develop their sociability, make them useful citizens and to improve their academic achievements.

The scheme provides that every teacher of the university shall act as an honorary Academic Adviser to a group of students allotted to him. The Academic Advisers will perform the following functions:

- (i) To maintain a cumulative record in detail of the life history of students under his guidance.
- (ii) To communicate to the legal guardians and other concerned persons the acts of omission and commission of students requiring special attention and to keep them informed regarding progress and performance of the students.
- (iii) To advise students on the following:
 1. Choice of subjects, availability of academic and financial facilities;
 2. Physical and health services, games, sports, recreational and co-curricular activities;
 3. Removal of educational difficulties, adjustment and accommodation problems;
 4. To establish contact with persons and authorities performing similar functions such as Dean of students welfare, Chief Proctor, subject teachers etc.;
 5. Heads of departments, subject teachers, deans, wardens and the controller of examinations shall send relevant information to the Adviser;The cumulative records shall be open for inspection by the guardian, student himself, and any other person or authority appointed by the university.
- (iv) Students under the guidance of an Academic Adviser shall

meet him frequently but such meetings must be held twice in a session which shall be properly recorded in the identity card of the student.

- (a) All student grievances of general nature (not related to the department) shall be sent through the academic adviser who shall forward them to the appropriate authority with necessary recommendation.
- (b) In case of unreasonable demands, specially of non-academic nature, the academic adviser shall report to the legal guardian of the student.
- (c) No authority of the university shall take any action on any such application unless it passes through the academic adviser.
- (d) There shall be no appeal against the remarks and deci-

sions of the academic adviser. His entries in the cumulative record of student shall in no case be removed provided that before making any adverse entry he shall have to inform the student and his guardian.

- (e) The academic adviser shall have necessary powers to visit hostels, and houses of local students and will be given facilities for this purpose.

The cumulative record shall be the only valid testimonial for the work and conduct of the student and no other record except for the purely academic matters shall be supplied by any other authority of the university.

There shall be frequent meetings between the proctor, dean of students, warden and academic advisers during the session for evaluating the progress of the scheme.

The suggestions for improvement of the scheme may be addressed to Dr. S.N. Singh, Dean of Education Faculty of the university.

Challenge on Farm Front

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towards spread of technology for development and also help in receiving feedback for evolving appropriate technology for development in each field.

Agricultural universities, structured as they are and having a strong bias of integrating teaching, research and extension are suited as ideal institutions for generating and spreading new knowledge and technology in agriculture and allied fields through its delivery system. It will be pertinent to quote the world Bank's remarks in its research report prepared by the International Council for Educational Development. It says, "if one takes a broad view of India's agricultural knowledge-generating and disseminating system, including research centres and experimental centres and the more qualified agricultural experts posted at the block and district level, then it seems fair to conclude that the system, as a whole, did contribute significantly to the dramatic increase in production in certain areas. Bigger and more progressive farmers could use the system on their own above village levels where the resources of new knowledge were concentrated and they brought home new answers to their questions which they put to profitable use. But this haphazard process of knowledge gave India's agricultural knowledge system an unwitting bias. The smaller farmers, especially the subsistence farmers, got left behind". It is here that the true challenge lies. If technology in agriculture has to make a deeper dent for widespread development, for the development of all areas, and improvement in the pursuits of all levels of people in agriculture, the educational system has to be far more broad based.

(Courtesy : The National Herald)

Special fund for farm varsities

A national agricultural research fund is proposed to be raised by the Union Government for financing research programmes of agricultural universities. The fund instituted under the scheme 'National Agricultural Research Project' will strengthen the regional research capabilities of these universities.

The project is likely to concentrate on foodgrains (cereals, pulses and oilseeds) in each agro-ecological zone. Particular attention will be paid to foodgrains grown under rainfed conditions and mixed farming systems involving livestock and fish production systems.

Total estimated outlay on the project during the current plan period will be Rs 42.30 crores. Some assistance for the project is expected from the International Development Association—an affiliate of the World Bank. Negotiations are being held with the Bank. A sum of Rs 22.30 crores is expected to be received from the IDA.

Science writers urged to use easy language

Dr P.C. Chunder, Union Education & Social Welfare Minister while opening a symposium on 'science literature for rural areas' in New Delhi asked the science writers to produce their works in simple language so that a villager who has learnt to read may understand them. Dr Chunder said this was essential if science and technology were to benefit the masses.

The Minister urged the authors to take to writing books on science in regional languages. Simple prose could bring the complicated word of science within the easy reach of even the neo-literate rural folk.

The symposium was presided over by Dr Atma Ram, Chairman of the National Science and Technology Committee and was organised by the Council of Scientific and Industrial Research in collaboration with Delhi Hindi Sahitya Sammelan.

SNDT organises training for foreign teachers

The S.N.D.T. Women's University in collaboration with the United States Educational Foundation in India conducted the third Summer Institute in Asian Studies for the New York University group of teachers. The main purpose of the Institute was to assist the American teachers preparing and evaluating projects for teaching Indian history and culture in the United States of America. The experience and material from the course will also help the teachers in developing a curriculum for the Asian Studies programme at American schools. The course will also provide them an opportunity to gain first hand experience in the area of specialisation which happens to be India.

National museum of Man to be set up in Bhopal

The Education Ministry has decided to set up the National Museum of Man in Bhopal. This will be the country's first anthropological open air-cum-indoor museum and seeks to project the whole of man's development at one small point.

Earlier the idea of locating the museum in Bhopal was opposed on grounds of less exposure to masses and accessibility of the site. Madhya Pradesh has already two museums at Chindwara and Jagdalpur. The museum on 'man' will be the third museum in the state.

Educational monitoring group formed

The Planning Commission has constituted an expert group to study the monitoring system for education. The study group will review the existing monitoring system and make suggestions for improvement in the context of the requirements of the rolling plan. The group will be headed by a member from the Planning Commission and will have representatives of the UGC, NCERT and some of the State Governments.

The group will also study the planning machinery in the states

and will submit its report within two months.

Roorkee renders assistance in Algeria

The Roorkee University is setting up a 'Water resources development training Institute' in Algeria at the request of the Algeria Government made through Indian Water and Power Consultancy Services. An agreement for preparing the feasibility report has already been signed and a team of university experts will be leaving for Algeria shortly. A four-member delegation from Algeria had visited the University earlier to sort out the details.

Autonomous status for colleges

Dr P.C. Chunder, Union Education Minister informed the Lok Sabha that thirteen colleges are being conferred autonomous status by the universities to which they are affiliated. The status would enable these colleges to determine their own curricula, courses of study and evaluation methods. One of these colleges is affiliated to Ranchi University, eight to Madras University and four to Madurai University. The universities will continue to award the degree to the students of these colleges.

The Minister informed that Technical Institutes could also be conferred autonomous status in accordance with the universities Acts.

NCC units to be raised

The Defence Minister, Mr Jagjivan Ram while inaugurating the second joint Conference of State Representatives and Directors of NCC in New Delhi asked all concerned with the NCC to rededicate themselves to the objectives of this national programme of the country.

He said full-time officers of the organisation will be considered for permanent commission in the NCC in order to improve their terms and conditions of service.

He announced that fifty more units of the senior division will be raised during the next two years. Twenty-five of these will be raised this year.

A list of Doctoral Theses Accepted by Indian Universities

SOCIAL SCIENCES

Psychology

1. Ghumman, Mohinder Singh. A study of aptitude, personality traits and achievement motivation of academic achievers and under achievers. Ravishankar University.
2. Jha, Jai Chandra. Motivation and attitude of employees in a steel industry. Ravishankar University.

Sociology

1. Bhandarkar, Purshottam Laxman. A sociological study of a minority community: Case study of the Parsis of Nagpur. Nagpur University.
2. Dhasmana, Manomohan. Sociology of the Ramos of Arunachal Pradesh. University of Gauhati.
3. Raj Singh. Social legislation and rural social change in Haryana. Haryana Agricultural University.
4. Verghese, Susan. Modernization and alienation: Their empirical structure and relationship with education. Andhra University.

Political Science

1. Somjee, Geeta. An examination of socialist concerns, critiques, agitations and organisational attempts within the Indian National Movement. M.S. University of Baroda.
2. Yadav, Ram Singh. Nehru ke bad Bhartiya Rashtriya Congress: Uddeshya aur uplabdhi. Vikram University.

Economics

1. Chenchi Reddy. Kalluri. Trends and determinants of India's exports of engineering goods: 1956-57 to 1974-75. Andhra University.
2. Datta, Sunil Kumar. The origins of the Indian Railway system: Economic and social aspects of the growth of the Bengal Nagpur Railway, 1887-1914. University of Calcutta.
3. Devle, Dattatrya. Central assistance for planned economic development of the states with special reference to M.P. Vikram University.
4. Sharma, Anuradha. Multivariate study of the factors related to job performance of skilled workers in some Indian industries. Indian Institute of Technology, Delhi.
5. Venkata Subramanian, K. Economic aspects of the growth of primary education in Tamil Nadu. M.S. University of Baroda.

Law

1. Gopalakrishnan, P. A socio-legal study of the Industrial Disputes Act 1947. University of Delhi.

Public Administration

1. Sreevalsan, T.K. Administration of State Electricity Boards with special reference to Kerala. University of Kerala.

Education

1. Gupta, Gyan Prakash. Leadership behaviour of secondary school Head Masters in relation to their personality and the climate of their schools. South Gujarat University.
2. Indurkha, B.L. The minimum adequate English language ability for higher secondary teachers of English: Measurement and survey. Bhopal University.
3. Khajapeer, M. A study of the academic performance of the Farmers' Functional Literacy Programme participants in relation to some socio-psychological factors. Sri Venkateswara University.
4. Kumar, Swaranjit Kaur. A study of the development of educational administration in India through various commissions appointed between 1854 to 1966. M.S. University of Baroda.

5. Parmaji, S. The relationship between general higher education and job aspirations, job satisfaction and job efficiency of non-professional job holders. M.S. University of Baroda.

6. Premi, Kusum K. Protective legislation and equality of educational opportunity: A study of the scheduled castes in the Punjab. Jawaharlal Nehru University.

7. Shukla, Krishna Chandra. Factors differentiating high and low academic performance of secondary schools in Rajasthan. University of Udaipur.

Commerce

1. Bandyopadhyay, Bhabotosh. Cash management: Derivation from case studies. University of Calcutta.

HUMANITIES

Philosophy

1. Gupta, Dikshit. Descriptive metaphysics: Its scope and prospect. University of Calcutta.

Language & Literature

English

1. Mohammed Elias. The India of Melville and Mark Twain: A study in geo-cultural symbolism. University of Kerala.

2. Pal, Anasuya. Developing a reading oriented E.L.T. strategy: A psycho-linguistic study. Central Institute of English and Foreign Languages, Hyderabad.

Sanskrit

1. Bhattacharya, Aruna. Nyayadarsane paromarse. Rabindra Bharati University.

2. Gopalacharyulu, K.V.R. Alamkara: An edition of Sahitya-Sudha-Sindhu with critical notes and introduction. Sri Venkateswara University.

3. Kripacharyulu, Munuganti. Sayana and Madhava Vidyaranya: A study of their life and letters. Karnatak University.

4. Mishra, Radha Kant. M.M. Pandit Sudhakar Dwivedi ka vyakatitw evam krititw. Kameshwar Singh Darbhanga Sanskrit University.

5. Pandeya, Vidhu Shekhar. Rigveda dasham mandatsya vishishtadhyanam. Kameshwar Singh Darbhanga Sanskrit University.

6. Patil, Manik Madhusudan. Arvacheen Sanskrit mahakavya: 17 vya shatkapasoon 1975 prayatchya Sanskrit mahakavyoche samalochan. Nagpur University.

7. Rai, Kamla. Mahakavi Kshomendra ke kritiyon ka sanskritik evam darshanik adhyayan. Jiwaji University.

8. Sarma, Boggavarapu Venkata Visweswar Sita Rama. The study of Cow in Sanskrit literature. Andhra University.

9. Swamy, M. Sivakumara. A critical study of the alankara works of 18th and 19th centuries. Bangalore University.

Hindi

1. Batta, Madhurima. Jainendra Kumar: Chintan aur srijan. University of Delhi.

2. Dilliwar, Tejam. Madhyayugeen bhaktikavya mein naitikta ka swarup. Ravishankar University.

3. Dwivedi, Radhe Shyam. Madhyayugeen laukik kavyadhara aur chhitai charit. Jiwaji University.

4. Farahat, Shafiq. Nazir Akbarabadi ke Hindi kavya aur Urdu shayari ka adhyayan. Jiwaji University.

5. Kahar, Bhagwandas Narayandas. Dharmvir Bharati: Vyaktitw aur krititw. M.S. University of Baroda.

parampara. University of Bihar.

7. Om Prakash. Nai kavita mein dhvani. University of Delhi.

8. Pandey, Shiv Prasad. Geetikavya ko adhunikyugeen kavayitriyon ka yogdaan. Ravishankar University.

9. Ramalingappa, Banda. Madyakaleen Hindi evam Telugu nirguna parampara: Ek tulnatmak adhyayan. Andhra University.

10. Rao, K. Mallikharjuna. A comparative study of the concept of woman in the modern poetry of Hindi and Telugu. Andhra University.

11. Rao, Sajja Pasupati. A comparative study of Hindi and Telugu folk songs. Andhra University.

12. Sharma, Asha. Ramcharitmanas ke pramukh nari patron ka tulnatmak evam vikasatmak anusheelan. University of Indore.

13. Verma, Dhruwa Kumar. Chhattisgari aur Oriya mein saamya aur vaishmya tatha Chhattisgari mein Oriya tatwa. Ravishankar University.

14. Viswambharan, T.N. A study of the techniques of Hindi drama: Post Prasad period. University of Kerala.

Bengali

1. Datta, Manomohan. Kumarsambhav-kavya-o-kavi. University of Calcutta.

2. Chaudhuri, Somendranarayan. Bangla natya sahitye Kamedir dhara, 1850-1950. University of Calcutta.

3. Khatun, Sanjida. Robindra sangeeter bhabsampad. Visva-Bharati.

4. Nag, Sukla. Bangla bhasa-o-sahitya prasanga, Lalit-kumar Bandyopadhaer rachanabalir mulyayan. University of Calcutta.

Gujarati

1. Pandya, Sudha Niranjana. Life and works of Vadilal Motilal Shah: A study. M.S. University of Baroda.

Marathi

1. Bhalerao, Vimal Jaywant. Adhunik Marathi Vangmayatee Striyanchi atmcharitre (kaalkhand 1910-1975): Ek

Chikitsak Adhyayan. Nagpur University.

2. Pajankar, Ruprao Pandurang. Gadak yanchya nata-kanteel vyaktimative: Ek abhyas. Nagpur University.

3. Sankpal, Bapuji Dattu. Peshwokaleen Marathi bakhr vangmay. Marathwada University.

Oriya

1. Chaini, Ratnakar. Odia natkar udlehaba O' bikash upto 1939. Utkal University.

Tamil

1. Ghadigachalam, N. Asta prabandham of Pillai-P-Perumal Aiyankar. Sri Venkateswara University.

Telugu

1. Shastri, Vedula Subrahmanya. The Panchatantra champu in Telugu. Andhra University.

Geography

1. Bandyopadhyay, Tarapada. Geography of Sikkim: A regional analysis. University of Calcutta.

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3. Nayak, Dhani Ram. The rural settlement in Chhattisgarh Region. Ravishankar University.

History

1. Baksi, Dwijendranath. Brahmanical Gods and Goddesses in Japan. University of Calcutta.

2. Bindra, P. A study of Kullu Region from earliest times to the 18th century A.D. Himachal Pradesh University.

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5. Mukhopadhyay, Samir Kumar. Problems of public museums in archaeological sites in India. University of Calcutta.

6. Sanyal, Rajat. Pattern and participation in the urban public life of Bengal 1815-1876. Rabindra Bharati University.

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- Babu, D.S. "A study of cohesiveness in relation to some force of attraction for groups of teaching staff". *Indian Dissertation Abstracts* 5(3&4); July-Dec 77: 200-3.
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 - I. Floriculturist One Post
 - J. Research Officer One Post
 - K. Lecturer in Agril. Engineering
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 - L. Lecturer in Animal Nutrition
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 - M. Lecturer in Agril. Extension
One Post
 - N. Lecturer in Agril. Entomology
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(iii) At least 10 year's experience of teaching preferably at post-graduate level;

(iv) Capacity to conduct and guide research as evident from published papers;

(v) Demonstrated ability of Leadership in the field of Research and significant contribution to the progress of Veterinary & Animal Sciences

For B : Essential

(i) Consistently good academic record with first or high second class Master's degree or recognised equivalent qualification in Agricultural Engineering with specialisation in Farm Machinery & Power/Process Engineering/Soil & Water Engineering following a good Bachelor's degree in Agricultural/Mechanical/Civil Engineering;

(ii) A Doctoral Degree in Agricultural Engineering at (i);

(iii) At least 10 years' experience of teaching preferably at post-graduate level;

(iv) Capacity to conduct and guide research as evident from published papers;

(v) Demonstrated ability of Leadership in the field of Research & significant contribution to the progress of Agriculture.

For C : Essential

(i) Consistently good academic record with first or high second class (B+) Master's degree (Agriculture) or recognised equivalent qualification in Plant Pathology following a good degree.

OR

A good Master's degree in Botany with specialisation in Mycology and Plant Pathology following a good honours degree;

(ii) A Doctoral degree in relevant subject at (i);

(iii) At least 10 years' experience of teaching preferably at post-graduate level;

(iv) Capacity to conduct and guide research as evident from published papers;

(v) Demonstrated ability of leadership in the field of research and significant contribution to the progress of Agriculture.

For D : Essential

(i) Consistently good academic record with 1st or high 2nd class (B+) Master's degree in Agronomy or recognised equivalent qualifications (e.g. Assoc. IARI) following Hons degree;

(ii) 10 years' experience in the management of Farms out of which 5-years should have in a position of responsibility;

(iii) Demonstrated capacity of leadership in the field of organisation and

management of large sized Farms (State or Viswa Vidyalaya owned);

(iv) Knowledge of Agricultural conditions in the country, preferably in the State of West Bengal.

Desirable

A Doctoral degree in Agronomy.

For E : Essential

(i) Consistently good academic record with 1st or high second class (B+) Master's degree in Agricultural Extension or any discipline basic to Agricultural Extension following a good degree in Agriculture;

(ii) A Doctoral Degree in the relevant subject at (i);

(iii) Five years' experience of teaching preferably at post-graduate level;

(iv) Capacity to conduct & guide Research as evident from published papers.

For F : Essential

(i) Consistently good academic record with 1st or high 2nd class (B+) Master's degree or recognised equivalent qualification in Agricultural Entomology following a good degree in Agriculture.

The above qualification may be relaxed for candidates who may be otherwise found suitable.

(ii) A doctoral degree in relevant subject at (i);

(iii) Five years experience of teaching preferably at post-graduate level;

(iv) Capacity to conduct & guide Research as evident from published papers.

For G : Essential

(i) Consistently good academic record with 1st or high 2nd class (B+) Master's degree in Horticulture with specialisation in Pomology/Fruit and Vegetable Preservation/Olericulture or Floriculture following a degree in Agriculture;

(ii) A Doctoral degree in relevant subject at (i);

(iii) Five years' experience of teaching preferably at post-graduate level;

(iv) Capacity to conduct and guide Research as evident from published papers.

For H : Essential

(i) Consistently good academic record with 1st or high 2nd class (B+) Master's degree in Horticulture/Genetics and Plant Breeding with specialization in Genetics or/and Breeding or Ornamental plants following a degree in Agriculture;

(ii) A Doctoral degree in relevant subject or research contribution of equal merit at (i);

(iii) At least 5 years research experience in Genetics or/and Breeding of Ornamental Plants.

For I : Essential

(i) Consistently good academic record with 1st or high 2nd class (B+) Master's degree in Horticulture with specialisation in Floriculture following a degree in Agriculture;

(ii) A Doctoral Degree in relevant

subject or research contribution of equal merit at (i);

(iii) At least five years research experience in Floriculture.

For J : Essential

(i) Consistently good academic record with 1st or high 2nd class (B+) Master's degree in Microbiology OR in Agricultural Chemistry and Soil Science / Botany / Biochemistry with specialisation in Microbiology; Preference will be given to Agricultural Graduates;

(ii) A Doctoral Degree in relevant subject at (i);

(iii) At least five years experience of research in the concerned field.

Desirable

(i) Experience in Tissue Culture;

(ii) Experience of teaching Microbiology in the post-graduate courses.

For K : Essential

(i) Consistently good academic record with first or high 2nd class (B+) Master's degree in Agricultural Engineering with specialisation in Farm Machinery & Power/Soil & Water following a good Bachelor's degree in Agricultural/Mechanical Engineering;

(ii) A Doctoral Degree in relevant subject at (i);

(iii) At least 2 years experience of teaching/research.

For L : Essential

(i) Consistently good academic record with 1st or high 2nd class (B+) Master's degree in Animal Nutrition or recognised equivalent qualification following a good Bachelor's degree in Veterinary & Animal Science;

(iii) A Doctoral degree in relevant subject at (i);

(iv) At least 2 years experience of teaching/research.

For M : Essential

(i) Consistently good academic record with first or high 2nd class (B+) Master's degree in Agricultural Extension following a good degree in Agriculture;

(ii) A Doctoral degree in relevant subject at (i);

(iii) At least 2 years' experience of teaching/research.

For N : Essential

(i) Consistently good academic record with first or high 2nd class (B+) Master's degree in Agri. Entomology following a good degree in Agriculture;

(ii) A Doctoral degree in relevant subject at (i);

(iii) At least 2 years' experience of teaching/research.

For O : Essential

(i) Consistently good academic record with first or high 2nd class (B+) Master's degree in Horticulture with specialisation in Floriculture or Ornamental Horticulture following a good degree in Agriculture;

(ii) A Doctoral degree in relevant subject at (i);

(iii) At least 2 years' experience of teaching/research.

For P : For 1st post: Essential

(i) Consistently good academic record with first or high second class (B+) Master's degree in Agronomy or recognised equivalent qualifications following a good degree in Agriculture;

(ii) A doctoral degree in the relevant subject at (i);

(iii) At least 2 years' experience of field research as evidenced by published work on Crop Production;

(iv) Experience of demonstration work on Farmers Field.

Desirable

(i) Knowledge of Modern Methods of investigation in Agronomy;

(ii) Knowledge of Extension methods.

For 2nd post: Essential

(i) Consistently good academic record with first or high second class (B+) Master's degree in Agril. Chemistry & Soil Science with specialisation in Soil Fertility or recognised equivalent qualifications following a good degree in Agriculture;

(ii) At least 2 years' research experience on Soil Fertility as evidenced by published papers;

(iii) Experience of Soil & Plant analysis and knowledge of Soil tests diagnostic technique their interpretation and correct fertilizer use;

(iv) A doctoral degree in the relevant subject at (i)

Desirable

(i) Knowledge of practical methods of soil and water management and their application to the field problems;

(ii) Knowledge of agronomy techniques for maximising efficiency of various inputs.

For 3rd post: Essential

(i) Consistently good academic record with 1st or high 2nd class (B+) Master's degree in Plant-Pathology/ Agricultural Entomology or recognised equivalent qualifications following a good degree in Agriculture;

(ii) At least 2 years' research experience in problem of Pests/Disease of important crops as evidenced by published papers;

(iii) A Doctoral degree in the relevant subject at (i);

Desirable

(i) Experience of use of modern methods of disease and pests control and their interaction with different crops in intensive crop rotation.

For 4th post: Essential

(i) Consistently good academic record with first or high 2nd class (B+) in M.Sc. (Ag.)/M.Sc. in Agril. Engineering with specialization in Soil and Water service/training in Soil conservation;

(ii) A doctoral degree in the relevant subject at (i);

Desirable

(i) Experience of handling repair and maintenance of agricultural machineries/soil conservation work;

(ii) At least 2 years' experience of rural conditions of W. Bengal.

For Q : Essential

(i) Consistently good academic record with a first or high 2nd class (B+) Master's degree in Horticulture with specialisation in Olericulture or Genetics & Plant Breeding or Agril. Botany with specialisation in Plant Breeding following a good degree in Agriculture;

(ii) A Doctoral degree in relevant subject at (i);

(iii) At least 2 years' research experience in Plant Breeding preferably in Vegetable Crops.

Desirable

(i) Knowledge of Vegetable Cultivation in W. Bengal.

For R : Essential

(i) A good honours degree in Agriculture;

(ii) At least three years experience of the Management of a sizable Agricultural Farm.

Desirable

(i) M.Sc. (Ag.) degree or recognised equivalent qualification in Agronomy.

For S : Essential

(i) A good Master's degree in Agricultural Statistics/Statistics. Preference will be given to those who possess degree in Agriculture.

Desirable

(i) At least two years experience of Statistical work preferably in relation to collection and analysis of Data from the Field.

Experience and age limit may be relaxed on the recommendation of the Selection Committee in the case of a candidate otherwise well qualified. A high initial pay in the scale may be granted on the basis of qualifications, experience and present emoluments.

Applications must be submitted in the prescribed form which may be obtained from the Office of the Registrar, Bidhan Chandra Krishi Viswa Vidyalaya, P.O. Mohanpur, Dist Nadia, West Bengal personally or by sending self addressed stamped (0.25) Paise envelope (25 cm x 12 cm) on payment of Rupees eight (Rs. 8.00) only for the posts by crossed Indian postal order in favour of the Bidhan Chandra Krishi Viswa Vidyalaya. Persons already in employment should apply through proper channel. Candidates abroad may also apply on plain paper with necessary Postal Order. Applications, completed in all respects, should be submitted in an envelope superscribed with the name of the post and must reach office of the Registrar by the 15th September, 1978.

Candidates called for interview will have to appear for the same at their own cost.

REGISTRAR

UNIVERSITY OF DELHI

Corrigendum to Advt. No Estab. IV/53/78 published in the columns of this journal on August 15, 1978

Appointments to the posts of Research Associates which are made on tenure basis will carry consolidated monthly emoluments as under:

A—Rs. 1000/-; B—Rs. 1200/-; C—Rs. 1400/-; and will not be made on the time scale of Rs. 700-1300 as advertised.

Delhi-110007

20th August 1978

REGISTRAR

OSMANIA UNIVERSITY

Hyderabad, 500 007 (A.P.)

Advertisement No. 12/1978

Applications, in the prescribed form together with the registration fee of Rs 5/-, are invited for the following posts in the University service, so as to reach the undersigned on or before 20.9.1978:

S.No.	Name of the post	Specialisation	Scale of pay
1.	Professor of Civil Engineering	Soil Structure interaction	Rs 1500-2500
2.	Professor of Electrical Engg.	Power Electronics	
3.	Professor of Electronics and Communication Engineering	Microwave Engg.	
4.	Professor of Mechanical Engineering	Catalysis and Reaction Engg.	Rs 1200-1900
5.	Professor of Chemical Engineering/Technology	Public Health and Env. Engg.	
6.	Reader in Civil Engineering	Electrical Drives	
7.	Reader in Electrical Engg.	Bio-medical Electronics	Rs 700-1600
8.	Reader in Electronics & Communication Engineering	Mining Geology & Mining	
9.	Reader in Mechanical Engineering	Surveying	
10.	Readers/Asst. Professors in Mining Engineering (two)		
11.	Lecturer in Civil Engineering		

Age

- Professors : Not above (50) years
Readers : Not above (40) years
Lecturers : Not above (35) years

Note: (i) Age limit does not apply to the employees of this University.

(ii) Relaxation in age to the extent of five years may be granted to candidates belonging to S.Cs., S.Ts. and B.Cs. for the posts of Lecturers only.

(iii) The teachers of affiliated colleges who have put in at least five years service in any of the college affiliated to the Osmania University may be given relaxation in age to the extent of five years.

(iv) Age relaxation can be considered in deserving cases.

14%, 4% and 25% reservations are made for Scheduled Castes, Scheduled Tribes and Backward Classes respectively only in case of Lecturers.

Application forms can be had from the Director, Department of Publications and University Press, Osmania University, Hyderabad-500 007, Andhra Pradesh (India) on payment of Rs 4-50 in person or by money order or by a postal order UNCROSSED made payable to the Director and by sending a self-addressed envelope (11½ × 26½ cms) duly stamped for ordinary or registered post.

Full particulars can be obtained on requisition from the Director, Osmania University Press, free of cost, by sending a self-addressed stamped envelope.

B. Ramachandra Reddy
REGISTRAR

GURU NANAK DEV UNIVERSITY AMRITSAR

Advertisement No. 16/78

Applications are invited for the following posts on prescribed form obtainable (free of cost) from Office of the Registrar, Guru Nanak Dev University, Amritsar by making a written request accompanied by self-addressed stamped envelope of 23 × 10 cms so as to reach this office by 12-9-1978 along-with crossed postal orders for Rs 7.50 for post at Sr. No. 1 and Rs 5/- for posts at Sr. No. 2 & 3 drawn in favour of Registrar, Guru Nanak Dev University, Amritsar. Application fee is not refundable.

Note: Persons already in employment must send their applications though their employers.

Punjabi Language, Literature & Culture Department

1. Reader (Grade Rs 1200-50-1300-60-1900)
2. Research Fellow (Rs 400/- p.m. fixed)

Chemistry Department

3. Senior Research Fellow (CSIR) (Rs 500/- p.m. fixed)
(Research Project: "Biogenetic Type Synthesis of Natural Products")

QUALIFICATIONS: For post at Sr. No. 1: (i) Consistently good academic record with a doctoral degree or equivalent published work. (ii) 1st or high 2nd Class (B+) Master's degree of an Indian University in Punjabi or an equivalent degree of a foreign University. (iii) About five years' experience of teaching and/or research, provided that at least three of these years were as Lecturer or in an equivalent position.

Preferable: Rich grounding in Punjabi Folklore, Culture and/or Literature.

For post at Sr. No. 2: 1st or high 2nd Class (B+) Master's degree in Punjabi. (ii) Research Experience and/or marked aptitude for research.

For post at Sr. No. 3: M.Sc. in Chemistry with two years research experience or Ph.D. in Organic Chemistry.

Mohinder Singh Randhawa
REGISTRAR

ANDHRA PRADESH AGRICULTURAL UNIVERSITY

Administrative Office,
"Central Library Building"
Rajendranagar,
Hyderabad-500030

Advertisement No 10/78

Applications in the prescribed form together with a registration fee of Rs 5/- are invited for the undermentioned posts in the Andhra Pradesh Agricultural University so as to reach the undersigned on or before 30-9-78. Applications received after the prescribed date, those received without evidence of having paid the registration fee and those submitted in a form other than the one supplied by this University will be summarily rejected.

1. DEAN OF POST-GRADUATE STUDIES

Scale of Pay: Rs. 1500-60-1800-100-2000-125/2-2500/-. (with an assessment at the stage of Rs 2000/-)

Qualifications

Essential

- (i) Doctorate degree in any branch of Agril. Sciences or Vety. Science or Home Science or equivalent degree or other published work of an equally high standard.
- (ii) At least five years of teaching in any Agril. College/College of Veterinary Science/College of Home Science or Institute of Research.
- (iii) Administrative experience in a responsible teaching or research or extension post.
- (iv) Reputation for initiative, leadership and ability to organise, coordinate and supervise the activities and work of others.

Note: Candidates should have a minimum age of 40 years. Preference will be given to those having high academic qualifications and outstanding achievements and to those who possess basic degree in Agril. Science or Veterinary Science or Home Science.

2. PROFESSOR OF SOIL SCIENCE (SOIL PHYSICS) (This post is for a period of 3 years)

Scale of Pay: Rs. 1500-60-1800-100-2000-125/2-2500. (with an assessment at the stage of Rs. 2000/-)

Qualifications Essential

- (i) Ph.D. degree in the subject concerned or other equivalent degree or other published work of an equally high standard.
- (ii) Ten years of teaching and/or Research and/or Extension in the subject concerned.

Note: Other things being equal a basic Professional degree in the Faculty concerned is preferred.

The persons selected for the post of Dean of Post-Graduate Studies (Post at Sr. No. 1) will be on probation for a period of one year on duty within a continuous period of two years.

Persons already in service must submit their applications through their employers, sending an advance copy direct so as to reach the undersigned within the prescribed date. Selection in their cases will, however, be subject to employer's agreement to relieve them.

Application forms can be had from the Registrar, Andhra Pradesh Agricultural University, "ADMN. OFFICE" Central Library Building, Rajendranagar, Hyderabad-500030 on payment of Rs. 2/- in person or by money order or through postal order (uncrossed). If the application form is required to be sent by Registered post, an amount of Rs. 2-30P should also be sent.

6. Candidates who are abroad may, however apply on plain paper together with an international money order for Rs. 7/- towards the Registration and application fees. Their applications will however be accepted upto 16-10-1978.

7. Applicants should be prepared to appear for personal interview at their own cost unless specially exempted. It is open to the University to fill or not to fill the posts now advertised.

V. Gopalakrishna
REGISTRAR

VIKRAM UNIVERSITY UJJAIN

No. Dev/78/Estt/Advt/1/2694

Dated 14.8.1978

Addendum

One post of Lecturer for the School of Studies in English has been omitted in the Advertisement No. Dev/78/Estt/Advt/1/2554 dated 7.8.78. Applications are invited for the same as per the procedure laid-down in the above said advertisement. The scale of pay and qualifications etc, would be the same as mentioned in our advertisement of 7.8.78. The last date for the receipt of application would be 20.9.78 as in the case of rest other posts.

V. Shankaran
REGISTRAR

GURU NANAK DEV UNIVERSITY, AMRITSAR

Advertisement No. 17/78

Applications are invited for the following posts on prescribed form obtainable

(free of cost) from Office of the Registrar, Guru Nanak Dev University, Amritsar by making written request accompanied by self addressed stamped envelope of 23x10 cms so as to reach this office by 26.9.1978 alongwith crossed postal order(s) for Rs 5/- drawn in favour of Registrar, Guru Nanak Dev University, Amritsar. Application fee is not refundable.

NOTE: Persons already in employment must send their applications through their employers.

Grade : (plus allowances as admissible under the University rules).

1. First Library Assistants : (Rs 400-30-640-40-800)
2. Library Assistants (temporary) Rs 300-25-600
3. Semi-Professional Juniors (Rs 120-5-150/10-250)
4. Research Fellow-cum-Demonstrator in Biology (Rs 400/- p. m. fixed + Rs 100/- as Demonstration Allowance)
5. Research Fellows in English and Hindi (Rs 400/- p.m, fixed)

Qualifications : For posts at Sr. No. 1. (i) M.A./M.Sc. 2nd Class and B.Lib. Science 2nd Class Or B.A./B.Sc. 2nd Class and M. Lib. Science 2nd Class; (ii) Punjabi upto Matric Standard; (iii) About 3 years' experience preferably in an academic library.

For posts at Sr. No. 2: (i) M.A./M.Sc. 2nd Class and B.Lib. Science 2nd Class Or B.A./B.Sc. 2nd Class and M.Lib. Science 2nd Class; (ii) Punjabi upto Matric standard; (iii) Experience in a well established Library will be a desirable qualification.

NOTE: For posts at Sr. No. 1 & 2: The Selection Committee may relax the condition for having passed Punjabi upto Matric standard if the candidates are found otherwise suitable but they will have to pass this examination within a period of four years after their joining the service.

For posts at Sr. No. 3 : Essential : (i) Matric/Higher Secondary; (ii) Certificate/Diploma in Library Science, (iii) Knowledge of Punjabi upto Matric standard. **Additional :** (i) Knowledge of Hindi upto Matric standard. (ii) Knowledge of typewriting in English/Hindi/Punjabi; (iii) Experience in a well organized library preferably University Library.

For post at Sr. No. 4: (i) First of High Second Class Master's Degree in Biology with good academic record; (ii) Aptitude for research.

For posts at Sr. No. 5: Research Fellow in English: (i) At least 2nd Class Master's degree in English with consistently good academic record; (ii) Aptitude for research. **Additional :** Knowledge of a European Language other than English. **Research Fellows in Hindi :** At least 2nd Class Master's degree in Hindi; (ii) Aptitude for research. **Preferable Areas of Research:** (a) Medieval Poetry (Sikh/Sufi/Nirgun Schools); or (b) Arya Samaji and/or Christian influences on Modern Hindi

Literary Renaissance; or (c) Stylistics and Modernity in Modern Fiction/Poetry.

Mohinder Singh Randhawa
REGISTRAR

THE UNIVERSITY OF BURDWAN RAJBATI : BURDWAN WEST BENGAL

Advertisement No. 2/78-79

Dated, 25th August, 1978

Applications in the prescribed form are invited for the following posts in the approved scales of pay [viz., (i) Professor Rs 1500-60-1800-100-2000-125/2-2500/-, (ii) Reader Rs 1200-50-1300-60-1900/- and (iii) Lecturer Rs 700-40-1100 50-1600/-] with allowances and other benefits as per University Rules.

A. Professor in Statistics ... One Post
(Department of Mathematic)

B. Reader in Physics ... Two Posts

C. Lecturer in Geography... Two Posts

MINIMUM QUALIFICATIONS

1. (a) A Doctor's Degree or published research work of an equally high standard and
- (b) Consistently good academic record with First or high Second Class (B in the seven point scale) Master's Degree in the relevant subjects or an equivalent degree of a foreign University.

2. Additional Requirements:

For Professorship

- (i) At least ten years' teaching experience in Post-Graduate Class;
- (ii) Competence to plan and supervise Research Project;
- (iii) Publication of sufficient merit.

For Readership

- (i) At least five years' teaching experience in Post-Graduate Class;
- (ii) Ability to supervise Research work;
- (iii) Publication of sufficient merit.

Desirable Qualification : Specialisation or Proficiency Required:

For A : Mathematical Statistics/Probability Theory

For B : Any branch of the subject

For C : (i) One post with specialisation of Economic Geography

(ii) One post with specialisation of Cartography/Meteorology/Geomorphology

The University Council may, on the recommendation of the appropriate Selection Committee, waive any of the requirements in view of the candidate's specialised knowledge in the subject. The choice of the Committee need not necessarily be confined to those who apply formally.

For application form and other information apply to the Registrar with a self-addressed stamped (0.40p.) envelope (9" x 4").

Last date for submission of applications with the requisite fee of Rs 5/- is 20, September, 1978.

A.K. Chaudhuri
REGISTRAR

**INDIRA KALA SANGIT
VISHWA VIDYALAYA
Khairagarh (M.P.)
Advertisement**

Applications are invited for the following posts in the University, viz:

Registrar, Reader in Folk Music/Art (one), Lecturer in Musicology (one and if vacancy exist two).

Scale of Pay

Registrar: Rs 1000-50-1500.

Reader: Rs 700-40-1100 (likely to be revised).

Lecturer: Rs 400-30-640-EB-40-800 (likely to be revised).

**Qualifications and Experience
(For Registrar)**

Essential

Possession of a Master's Degree in at least 2nd division together with 10 years administrative experience in a university or education department of central/state government or in and academy of music and fine arts of the state or central government or 7 years experience as a Teacher in a university or college with 3 years administrative experience in a university or education department of the central or state government.

Desirable

Good knowledge of working of the university system and experience of working in an institution of music and fine art.

Age

Not above 55 years.

(For Reader)

Either a first or second class M.A. in Vocal or Instrumental or Kathak Dance or Kovid in any of the subjects with B.A./B.Sc. etc and teaching experience for 7 years. Those with experience of working on folk music with special reference to rural involvement would be given preference.

(For Lecturer)

Possession of a Master's degree in Musicology in first or second division with 5 years teaching experience or a Master's degree in Vocal or Instrumental Music in first or second division with 5 years university teaching experience or a Kovid or an equivalent recognised examination with B.A./B.Sc. together with 5 years teaching experience or doctorate degree in musicology with 2 years university teaching experience. Adequate knowledge of Sanskrit is essential and preference will be given to those possessing master's degree in musicology.

Note: Those who have earlier applied for the post of Reader (Folk Music) need not apply again.

All posts are permanent and carry D.A. and P.F. benefits at the university rates. Appointments will be on probation as per university rules. Further details and prescribed forms for teaching Posts may be obtained from the Registrar by sending Postal Order for Rs 7 for Reader and Rs 5 for Lecturer together with self addressed Rupee 1 stamped envelope of 23 x 10 cm. For Registrar's post the application shall be made on plain paper in three copies. All applications duly completed shall be

sent to the Vice-Chancellor by Registered Post or be delivered personally. In exceptional circumstances any of the qualifications prescribed for Reader and Lecturer may be relaxed at the discretion of the university and it reserves the right to consider and appoint a person, who may not have applied. Last date for receipt of, duly completed, applications is **16th September, 1978.**

**RABINDRA BHARATI
UNIVERSITY
Calcutta-700007**

Employment Notification No. RB/32 (X)
APPLICATIONS are invited for the following posts:

- (1) Professor of Modern Indian History
- (2) Professor of Economics
- (3) Professor of Philosophy
- (4) Professor of Sanskrit and
- (5) Professor of Political Science

Scale of Pay: Rs 1500-60-1800-100-2000-125/2-2500 plus usual allowances and other benefits as per University Rules. Higher initial may be allowed in deserving cases on the recommendation of the Selection Committee.

**Qualifications
Essential**

1. (a) A Doctorate Degree or Research Work of outstanding merit;
- (b) Publications of merit;
- (c) Consistently good academic record with an aggregate of more than 54% marks;
- (d) Experience of teaching Post-Graduate classes for not less than ten years, ability to guide research work.

The candidates will indicate fields of their specialisation. Any of the above qualifications may be relaxed at the discretion of the Selection Committee.

Candidates may mention if they are interested in programmes related to major areas in the Faculty of Fine Arts.

Selection need not necessarily be confined to those who apply. Other things remaining equal, preference will be given to the candidates belonging to Scheduled Caste/Tribes.

Incomplete applications are liable to be rejected.

Four copies of applications in prescribed forms (available from the University Office, Jorasanko) together with attested copies of mark-sheets from Matriculation/S.F./H.S. onwards and a non-refundable fee of Rs 5 by Crossed Indian Postal Order payable to RABINDRA BHARATI should reach the Registrar by **September 14, 1978.**

REGISTRAR

**RABINDRA BHARATI
UNIVERSITY
Calcutta-700007**

Employment Notification No. RB/33 (XF)
APPLICATIONS are invited for the following posts:

- (A) Professors of (1) Rabindra Sangeet, (2) Instrumental Music, (3) Dance and (4) Painting.

QUALIFICATIONS

Essential for 1,2,3 (i) Good academic background with sound knowledge

of theory, (ii) Outstanding reputation as a performer, (iii) Capable of teaching Post-Graduate classes and guiding research. **Desirable:** (i) Publications of merit, (ii) Teaching experience in a recognised institution.

**Professor of Painting
Essential**

(i) At least a good Master's Degree, (ii) Well known in his own field. **Desirable:** Teaching experience in a recognised institution.

(B) **Reader** in (i) Rabindra Sangeet, (2) Instrumental Music, (3) Vocal Music—Three posts of which one should be filled by a Musicologist, (4) Dance, (5) Drama and (6) Painting.

**Qualifications for 1-5
Essential**

(i) Good academic background with sound knowledge of theory, (ii) Capable of teaching Post-Graduate classes and guiding research, (iii) Reputation as a performer. **Desirable:** Teaching experience in a recognised institution.

**Reader in Painting
Essential**

(i) Good academic background, (ii) A good degree or diploma from a recognised Art Institution, (iii) Capable of teaching Post-Graduate classes and guiding research. **Desirable:** (i) Teaching experience in a recognised institution, (ii) Publications of merit.

(C) **Lecturer** in Rabindra Dance Choreography.

Essential

(i) Good academic background with sound knowledge of theory, (ii) Reputation as a performer, (iii) Sound knowledge of Rabindra Dance Choreography. **Desirable:** Teaching experience in a recognised institution.

The candidates will indicate fields of their specialization.

Any one of the above qualifications may be relaxed at the discretion of the Selection committee.

Selection need not necessarily be confined to those who apply.

Other things remaining equal, preference will be given to the candidates belonging to Scheduled Caste/Tribes.

Scale of Pay for

Professors

Rs 1500-60-1800-100-2000-125/2-2500

Readers

Rs 1200-50-1300-60-1900

Lecturer

Rs 700-40-1100-50-1600

plus usual allowances and other benefits as per University Rules. Higher initial pay may be allowed in deserving cases on the recommendation of the Selection Committee.

Four copies of applications in prescribed forms (available from the University Office, Jorasanko Complex) together with attested copies of mark sheets from Matriculation/S.F./H.S. onwards and a non-refundable fee of Rs. 5 by Crossed Indian Postal Order payable to "RABINDRA BHARATI" should reach the Registrar by **September 21, 1978.**

Incomplete applications are liable to be rejected.

REGISTRAR

UTKAL UNIVERSITY

Advertisement No. Estt. 1/886-C/17193/78,

Dated 21.8.78

Applications are invited in the prescribed form alongwith attested copies of certificates and marklists of all examinations passed for the following teaching posts in the University service on or before 20.9.78

Sl. No.	Department	Post	No	Specialisation
1.	Geology	Professor—1 (Temporary) (J.N. Tata) Reader —1 (Temporary) Lecturer—1 (Under Graduate section)		Industrial Minerals. — —
2.	Labour Welfare	Reader —1		Specialisation either in the area of personal Management and/or in Industrial Relation.
3.	History	Lecturer—1 (Temp) Lecturer—1		1. The candidate should have studied Medieval Indian History in his M.A. course as his special paper. 2. Adequate teaching experience will be given weightage.
4.	Anthropology	Lecturer—2 Lecturer—1		One post of Lecturer Social Anthropology to teach special courses in South East Asia. One post of lecturer Pre-historic Archaeology. One post of lecturer (Temp.) Physical Anthropology.
5.	Commerce	Lecturer—2		Any of the Subjects (a) Financial Management (b) Management Accounting (c) Marketing Management (d) Transport (e) Organization Behaviour.
6.	Philosophy	Reader —1 Lecturer—1		— —
7.	Mathematics	Lecturer—1 (Temporary)		—
8.	Statistics	Lecturer—2 (Temporary)		—
9.	LL.M.	Reader —1		—

Scale of Pay

Professor—Rs 1500-60-1800-100-2000-12:2-2 00/-

Reader—Rs 1200-50-1300-60-1900/-

Lecturer—Rs 700-40-1100-50-1630/-

Age of Superannuation—60 years.

Essential Qualification

(a) Professor

The Professor shall

- be a Scholar of eminence.
- possess a good academic record with First or High Second Class Master's Degree in the subject. In cases of other suitably qualified candidates, the High Second class at M.A./M.Sc./M.Com may not be insisted upon:
- have a Doctorate Degree or published work of equivalent standard;

(iv) have independent published research work of high standard in addition to the published work mentioned in (iii) above.

(v) be engaged in active research and have experience of by successful supervision of doctoral research.

(vi) be teacher for ten years out of which at least seven years should have been spent in regular teaching in post-graduate/Honours classes.

(b) Reader: The Reader shall have

- A good academic record with a First or High Second class degree in the subject. In cases of other suitably qualified candidates, the High Second Class at M.A. M.Sc./M.Com. may not be insisted upon.

- A doctorate degree or published work of equivalent standard.
 - Independent published research work (in addition to the Published work mentioned in (ii) above),
 - Teaching and research experience for eight years out of which at least five years should have been spent in regular teaching in Post-Graduate/Hons. classes, capacity to guide research shall be regarded as an additional qualification.
- (c) **Reader (LL.M.)**—The Reader shall have:

- A good academic record with a First or a High Second Class Master's Degree in the subject. In cases of other suitable qualified candidates the High Second Class LL.M. may not be insisted upon.
- Doctorate or adequate research experience.
- Shall have 8 years teaching and/or professional experience at the Bar at High Court or Court of a Higher level out of which 3 years should have been in teaching.

The candidates who applied previously in accordance with the advertisement for the post of Reader in Law need not apply again.

(d) Lecturer

The lecturer shall have a good academic record with First or High Second Class Master's Degree in the subject. In cases of other suitable qualified candidates, the High Second Class at M.A./M.Sc./M.Com. may not be insisted upon.

DESIRABLE

Two years experience in teaching or/and M.Phil or M. Litt. or Pre-Doctoral degree. Candidates with a Ph.D. in the subject will be preferred.

In case candidates without Ph.D. Degree are appointed, they shall be required to acquire the Ph.D. degree within 5 years.

Prescribed application forms can be had from the Registrar, Utkal University in person on payment of Rs 7.49 including local sales tax (Rupees Seven and paise forty nine) only or by post on receipt of a crossed Indian Postal order for Rs 9.00 (Rupees nine) only payable to the Registrar, Utkal University, Vani Vihar, Bhubaneswar-4.

Candidates in Govt. service, if selected for the posts for which they have applied would be asked to pay pension contribution and leave salary in case they join the University service on foreign service terms and conditions.

The University reserves to itself the the right to decide the number of posts to be filled.

REGISTRAR

University lews

A CHRONICLE OF HIGHER EDUCATION & RESEARCH SEPTEMBER 15, 1978 80 PAISE



Shri B. D. Jatti, Vice-President of India, Dr. P. C. Chunder, Union Education Minister and Smt. Renuka Devi Barkataki, Union Minister of State for Education, with some of the teachers who received the National Awards

NAGPUR UNIVERSITY

Advt. No. GA/N/G/388

Dated 25th August, 1978

Employment Notice

(Combined Advertisement 'I' and 'J'
See detailed note below)

Applications are invited for the following posts in the University Departments, so as to reach the undersigned on or before 28th September, 1978.

1. Professor

Fine Art; Zoology (Ichthyology); Cellulose Technology; Chemical Engineering; Chemistry (For L.I.T.); Pharmaceutical Chemistry; Pharmacology/Bio-Pharmaceutics (One each)

2. Reader

English; Economics (Econometrics); Sociology; Home-Science (Food & Nutrition); Philosophy; Journalism; Education (New Mathematics); Business Management; Zoology (One each); Botany (Two—One General and One for Plant Physiology); Chemistry (Two—One for Physical Chemistry and One for Nuclear Chemistry); Law (Two—One each for Constitution and International Law).

3. Lecturer

Pharmacy (Microbiology); Geology; Education (New Mathematics); Cellulose Technology; Physics; Food Technology; Petro-Chemical Technology; Oil Technology; Mathematics; Pharmacology; Pharmaceutical Chemistry (analysis)-cum-Microanalyst (One each); Economics; Chemistry (Two Each); Law (Four—One for P.G.T.D. Law and 3 for Law College); Education (Five).

4. Director—Laxminarayan Institute of Technology.

5. Vice-Principal—University College of Law (City Branch)

Scales of Pay

- (i) Professor/Director, LIT: Rs 1500-60-1800-100-2000-125/2-2500.
- (ii) Reader : Rs 1200-50-1300-60-1900.
- (iii) Lecturer : Rs 700-40-1100-50-1600.
- (iv) Vice-Principal : Rs 700-40-1100-50-1600 plus Rs 50/- per month as administrative allowance.

All the posts carry usual allowances admissible under the University rules in force from time to time.

Qualifications

1. Professor/Director, L.I.T.

- (a) An eminent scholar with published work of high quality actively engaged in research in the subject concerned;
- (b) Ten years' experience of teaching and/or research;
- (c) Proved experience of guiding research at doctoral level.

2. Reader

Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

Not less than five years experience of teaching and/or research. This condition may be relaxed in the case of

candidates with outstanding research work.

3. Lecturer

- (a) A Doctor's degree or research work of an equally high standard; and
- (b) Consistently good academic record with first or high second class (B in the seven point scale) Master's degree in a relevant subject or an equivalent degree of a foreign University.

Having that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a consistently good academic record (weightage being given to M. Phil. or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirement.

4. Reader in Journalism

- (a) Master's degree in Journalism; or
- (b) Any Post-graduate degree with Bachelor degree of Journalism, both in second division and
- (c) Not less than five years experience of teaching and/or research OR Practical experience as Journalist.

5. Lecturer in Law

- (a) Candidate must have degree of LL.M. in first or high second class;
- (b) Teaching experience of two years in Law College.

6. Vice-Principal, University College of Law (City Branch)

Qualifications of Law Lecturers' post-mentioned above plus some administrative and teaching experience.

OR

LL.M. Degree of Nagpur University or any other equivalent qualifications of Indian or Foreign University preferably with three years teaching and/or administrative experience.

OR

First class LL.B. degree with a minimum of 5 years standing at the Bar, preferably with three years teaching and/or administrative experience.

OR

Second class LL.B. degree with a minimum period of ten years standing at the Bar preferably with three years teaching and/or administrative experience.

The Selection Committee may relax the prescribed qualifications in favour of a candidate recommended by it, provided no candidate having prescribed

qualifications is available or even if available, is not found suitable, for reasons to be recorded by it.

At first instance all the above posts as per advertisement 'I' will be treated as reserved for backward communities, viz: ST/SC/VJ/NT/OBC and if suitable candidates are not found from the backward communities, candidates as per advertisement 'J' will be considered on general merit.

Separate applications are necessary for both 'I' and 'J' advertisement as advertisement 'I' is exclusively for backward communities.

Eight copies of prescribed application forms, with particulars of details of qualifications specialisations, etc. will be supplied on payment of non-refundable fee of Rs 10/- by crossed Indian Postal Order payable to the undersigned alongwith self addressed envelope (12 x 25 cm).

Last date for supply of Blank Form-25th September, 1978.

**B. Y. Aher
REG STRAR**

UNIVERSITY OF KERALA

No. AII.3.169/76

NOTIFICATION

Applications are invited from qualified candidates for appointment to a post of Professor (Political Sociology) on Rs. 1200-1750 in the University Department of Politics.

Further particulars and application forms can be had from the University Office on production of a receipt for Rs. 2/- remitted to the Kerala University Fund Account in any branch of the State Bank of Travancore or on payment of the amount by crossed Postal Order payable to the Finance Officer, University of Kerala, Trivandrum. Requests for application forms should be addressed to the Deputy Registrar (Administration), University of Kerala, Trivandrum.

Last date for receipt of application is 30-9-1978.

**C.K. Devassy
REGISTRAR (Officiating)**

UNIVERSITY OF JABALPUR

Jabalpur

No. Estt/78/281-R

Dt: 24th August, 1978.

Notification extending date

It is notified that the last date for the receipt of applications for the posts of Professors in Economics & Chemistry, Readers in Economics and Hindi and Lecturers in Economics, Chemistry, History and Law, is now extended upto the 30th of September, 1978.

For details please refer to the Advertisement No. Estt/78/35347, dated 17.7.78 of the University and published in this paper on 15-8-78.

All application covers must bear the name of the post for which applications sent on the personal name of the undersigned.

**R. N. Tripathi
REGISTRAR**

UNIVERSITY NEWS

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*Opinions expressed in the articles
and reviews are individual and do
not necessarily reflect the policies
of the Association*

Hony. Editor : ANJNI KUMAR

Science, Technology and Society

Atma Ram*

Today when we claim that we are among the top ten industrial nations of the world, that we have the third largest number of scientists and technologists in the world and that the quality of our scientific activities is among the best, I do not see why the relationship between the scientists, engineers and the technologists engaged in industrial research and the industry should not be put on a contractual basis with absolute equality on both sides, and not that of an employer-employee type.

Why it is that over a period of time there has been a gradual diminution of worthwhile industrial research problems which may be referred by industry to the government industrial research laboratories. Reference to the National Research Development Corporation from the government industrial research laboratories for industrial exploitation of products and processes has been showing a gradual decline. It is time that these laboratories seriously took note of these trends and organised their research programmes on an entirely different basis.

The thinking people should sit back and analyse if anything has gone wrong and suggest appropriate measures to improve the situation. Take for instance, the simple fact that before independence, the Indian education system, whatever its shortcomings, was able to produce scientists of the highest international calibre like C. V. Raman, M.N. Saha, Birbal Sahni, S.N. Bose, P.B. Mahalanobis, who were all products of our universities and who functioned during most part of their life if not the entire life in the universities and brought lustre to themselves and to the country.

After independence, a large number of universities and institutions of higher learning, engineering institutions, technological institutions have been established. The Central Government provides substantial grants for the development and sustenance of education. So do the State Governments. In spite of all the expansion and support, we seem to have stopped producing men of the calibre mentioned above.

We made some very remarkable contributions to science even when there was government indifference to scientific research. Now, one hears everywhere the complaint that the quality of work in the universities has gone down in spite of the increased funds and facilities available. What is this due to? Is it a sociological malaise or undue political influence? Perhaps both. Only the other day, our Prime Minister referred to the deleterious political influence in our university campus.

(Continued on page 1160)

*Chairman, NCST, New Delhi.

Population Education

H. R. Arakeri*

The problem of population was first raised by Dr. Malthus in 1798. Since then, this has been agitating the minds of everyone concerned. Although we may hear that the population is quite a serious problem, different opinions are being expressed. One opinion that was expressed by the club of Rome indicates that after 200 years there will be no resources left to be used for development. Another view expressed is that after 200 years the world would be in a better position than what it is today. But, by looking at the increase of the population during the last few decades all that we can say is that, it is no doubt, an alarming problem. What implications this will have on various aspects of the problem? Already there is shortage of food; there is the problem of education. One calculation by the UNESCO shows that by 2000 A.D. there will be more uneducated or illiterate people than what we have today for lack of required number of teachers. In India, as far as food supply is concerned, the present level of 115 million tonnes will have to be increased to 230 million tonnes by 2000 A.D. That means it will have to be doubled.

Take the employment situation. During the first three quarters of this century, extra employment that was required to be created was 70 to 80 million. But, in the last quarter of this century the additional employment that will have to be created would be more than 100 million.

Take the urban growth. If there is a general growth of population taking place at $2\frac{1}{2}$ per cent, the growth in urban areas will be more than double—in some places it may be even 7 or 8 per cent. Will urban areas stand this pressure? Will it be possible to provide facilities needed to meet the demands of population that is migrating from rural areas to urban areas? These are some of the pressures which are likely to be created. How are we going to deal with these pressures? This will have to be done by carrying out the population education in its proper perspective and not just trying to do propaganda on family planning as has been done all these years. All those who are involved or engaged in carrying out extension education and developmental activities will have to be involved in this programme. Therefore, the main objectives of population education will have to be to equip the individual with knowledge, skill and understanding on: (a) assessment of population situations and trends in terms of problems as they may pose to himself, his family and community and society in general and (b) decide on and take effective courses of actions that can help solve these population-related problems. The rural development and agricultural extension workers being in direct

touch with rural population, may prove to be more effective in giving population education to rural masses.

The steps necessary in integration of population education in extension and development programmes are : (i) inclusion of population education items in pre-service, in-service and refresher training programmes, (ii) preparation of training material for the use of trainers as well as trainees, (iii) inclusion of population education items in the job chart of extension and rural development workers, (iv) preparation of literature for the use of workers and also for the use of the masses and (v) population education to be made all-pervasive.

In every item of work that is going to be done by these Extension Workers, they should give a touch of Population Education. Therefore, rural development and extension workers should concentrate on:

- (i) Improving the quality of life by improving earning capacity; by doing so, birth rate would automatically come down.
- (ii) Stress on nutrition aspects for adults to enable them
 - (a) to turn out more work and thus increase productivity of individuals;
 - (b) to remove drudgery in work by introducing improved tools and machines; and
 - (c) to let them realise that healthy parents mean healthy children.
- (iii) Stress on nutrition of children, so that survival percentage would improve. This will bring home to the couples the realisation that it is not necessary to bear large number of children to ensure survival of few.
- (iv) Stress on changing the attitudes.

Indian farmer or Indian worker is not lazy, but he is tired. He does not have a proper nutrition for doing work. Removal of lethargy can be done by introducing better tools, better implements and better machines. Therefore, removing lethargy is second aspect on which the rural development workers should concentrate and the third aspect is nutrition of the children. There is a feeling among rural people that they should produce larger number of children to take care of them in their old age; that unless they have 6 to 7 children, they will not be looked after in old age. We have to tell them it is not necessary to produce that many to have one in old age. Even if they have two and take care of them properly, then they will come up well and bring a good name to them. We have to tell them to take care of their children by giving them better nutrition. The last point about which you should stress is on the changing of attitudes of the public about these matters.

The Government has organised the Workshop on Population Education in the context of Agricultural Extension and Rural Development in Bangalore. It is not sufficient to organise workshops; action should follow to see that the field level workers are motivated. Let us not allow it to become a political problem. Let us make it a national problem which has to be tackled on massive scale. □

*Vice-Chancellor, University of Agricultural Sciences, Bangalore.

Tagore, the Educator

Rita Singh*

Tagore has not written any treatise on education. His writings are largely articles on education, which have been collected and presented in an educational system conforming to the spirit in which they have been written. He refused to systematise education or propound rigid educational theories. For according to Tagore, life is dynamic and change is the law of nature. Keeping in mind the dialectics of history, he formulated broad principles. The Tagorean system of education if at all it can be considered a system, is to be characterised by its new spirit and three fold syntheses—of the material and the physical world with the world of mind and spirit, of the past with future; and of diversity with unity, of the many with the one. Tagore achieves this by examining every fact and subject of his investigation with reference to Man and His evolutionary position. He envisages reality not as a static mechanism but a continual process. In consequence, he is driven to search for human significance in relation to the ends of that enduring and comprehensive process :

“The process of evolution, which after ages has reached Man, must be realized in its unity with him, though in him it assumes a new value and proceeds to a different path. It is continuous process that finds its meaning in Man . . .”

Tagore begins by assessing the significance of Indian history and reassessing its cultural values.

“The history of India has been the history of a struggle between the mechanical spirit of cadence and conformity in social organization, and the creative spirit of man, which seeks freedom and love in self expression.”

In 1912 Tagore reaffirming his admiration for the cultural values of India traces them back to the fundamental idea underlying the Upanishads. “Brahma is wisdom, Brahma is infinite; peace is in Brahma, goodness is in Brahma, and the unity of all beings is in Brahma.”

We have come to know that what India seeks is not the peace of negation or of some mechanical adjustment, but that which is in goodness, and in the truth of perfect union. that India does not enjoin her children to cease from karma. but to perform karma in the presence of the Eternal, with the knowledge of the spiritual meaning of existence, and that the true prayer of Mother India is:

“He who is one, who is above all colour distinctions, who dispenses the needs of men of all

colours, who comprehends all things from their beginning to the end, let Him unite us to one another with that wisdom which is the wisdom of goodness.”

In the light of this vision of Indian history, Tagore reassess the value of tradition and condemns all that have fallen into “traditionalism” and have become an anachronism today. Take for example his condemnation of the caste system which he analyses with the subtlest reasoning of a historian:

“... In her caste regulations India recognized differences, but not the mutability which is the law of life. In trying to avoid collisions she set up boundaries of immovable walls, thus giving to her numerous races the negative benefit of peace and order but not the positive opportunity of expansion and movement. She accepted nature where it produces diversity, but ignored it where it uses that diversity for its world-game of infinite permutations and combinations. She treated life in all truth where it is manifold, but insulted it where it is ever moving. Therefore life departed from her social system and in its place she is worshipping with all ceremony the magnificent cage of countless compartments that she has manufactured”.

He examines his own age, the contemporary India—India on the dawn of the 20th century. He criticizes the political, social and economic conditions of the existent pattern of society. Independence for Tagore will not only be freedom from foreign yoke merely, but affirmation of the self in broader philosophic sense. The meeting of East and West is the pivot of this New Education of modern India. Therefore, independence of the mind and spirit must go hand in hand with the Swaraj movement. His vision of modern India reaffirms ideal of freedom.

“If we follow the course of our modern political self-assertion we touch foreign history at its starting point. In a feverish political urge we had to imagine ourselves to be dream-made Mazzinis, Garibaldis and Washingtons; in our economic life we were caught in the labyrinth of imaginary Bolshevism, Syndicalism or Socialisms. These mirage-like manifestations are not the natural outgrowths of Indian history, but are fantasies born of our recent misfortune and hunger. As the film of this dream-cinema is being unrolled before our eyes, we see the address of the factory where the film originated.

“When we thus ramble over unknown road after unrealities, we lose our identity in sentimental distractions. Our success, however, can only be achieved through the *identification of our own personality*.”

He turns towards the West. He underlines the beneficial influences of Western enlightenment of India.

“We must recognize that it is providential that the West has come to India”

“We look for your Literature to bring to us the thundering life flood of the West, even though it carries with it all the debris of the passing moments.”

* Assistant Professor in French, JNU, New Delhi.

He underlines the greatness of Western civilization, its genius for organisational capacity etc., but deplores the growing identification of the West to its materialism, mass organisation, and nationalism and highlights the conflict existing in its spiritual aspiration and material living.

He firmly believes that the West has an important role to play in the world history, and that it must be conscious of its mission.

"I am not for thrusting off Western civilization and becoming segregated in our independence. Let us have a deep association. If providence wants England to be the channel of that communication, of that deeper association, I am willing to accept it with all humility. I have great faith in human nature, and I think the West will find its true mission. I speak bitterly of Western civilization when I am conscious that it is betraying its trust and thwarting its own purpose. The West must not make herself a course to the world by using her power for her own selfish needs, but by teaching the ignorant and helping the weak, she should save herself from the worst danger that the strong is liable to incur, by making the feeble acquire power enough to resist her intrusion. And also she must not make her materialism to be the final thing, but must realize that she is doing a service in freeing the spiritual being from the tyranny of matter . . ."

Tagore concludes that the decline of all civilization has been due to the disequilibrium produced between existing spiritual and material forces, like a disbalanced personality. In formulating his educational theories he would like to avoid the errors of eastern and western civilization.

His conclusions in confronting the two civilizations are: East and West are culturally complementary spirit of Man of the future. The West represents the triumph of Man over material forces and external nature. Logic is the corner-stone of this civilization. It expresses the dynamism of external nature.

The East with its intuitive mind has pondered for centuries over the eternal changes in nature and has realized that behind this outward dynamism there is a fundamental unity where all discords and contradictions converge into a great harmony; this point of the imminent and the transcendent, the spiritual and the material, the good and the evil, the creation and the destruction.

His idea on education bears out the same truth. "We are building our institution upon the ideal of the spiritual unity of all races"

This fundamental unity in diversity is the basis of harmony, poise or equilibrium, that is to be the axis of Man's development of his personality and that of his civilization. Tagore envisages an integral personality, as the basis of New Education :

"The object of education is to give man the unity of truth. Formerly, when life was simple, all the different elements of man were in complete harmony. But when there came the separation

of the intellect from the spiritual and the physical, the school education put entire emphasis on the intellect and on the physical side of man. We devote our sole attention to giving children, information, not knowing that by this emphasis we are accentuating a break between the intellectual, the physical and the spiritual life."

He envisages an education which will put Man in harmony with Nature.

"The highest education is that which does not merely give us information but makes our life in harmony with all existence. But we find that this education of sympathy is not only systematically ignored in schools, but it is severely repressed."

Tagore's idea of an Indian University is summed in his article the Modern Age:

"I have in my mind not merely a University, for that is only one aspect of our Visva-Bharati, but the idea of a great meeting place for individuals from all countries where men who believe in spiritual unity can come in touch with their neighbours. There are such idealists, and when I travelled in the West, even in remote places, many persons without any special reputation wanted to join this work..."

This ideal of spiritual unity of Man is the hallmark of Tagore's educational philosophy:

"We must know, that as through science and commerce, the realization of the unity of the material world gives us power, so the realization of the great spiritual unity of man alone can give us peace..."

It is this unity that gives him his place in cosmos, enlarges the dimensions of human personality by its extension in temporality and intemporality. Harmony in Man with his environment (social, political, economic, etc.) is the basis of this New Education. It is an education for peace and harmony. The blending of the two spirits the dynamism of the Western life, its progress (development of science etc.) and the Eastern concept of unity, the vision of a unified universe—of all creation being a manifestation of the one universal mind is the hall-mark of Tagorean education. Tagore's educational system is based on a double search:

"How to reconcile the heritage of the past, the needs of the present (social, political economic, etc.) and the aspiration of the contemporary age while preparing the way for future changes"

That is, an educational system which will be open, dynamic and realistic. This synthesis of past, present and future will be realized not only in the context of the national history but in the context of the world converging towards a greater unity.

In this vision of one world—Art plays an important part in the realization of unity in Man. Tagore analyses the functions of Art.

In old Sanskrit texts he found an affirmation of his theory that art is abundance, that it comes from a surplus of experience. The art abstract cannot be confined to intellectual purpose, social values or a moral judgment. Man is born with the capa-

city to transcend himself and his surroundings; in art he reveals this quality of transcendence. For Tagore this was not a matter of ontological thought but of everyday observation. The color that goes into a child's dress, the flowers arranged in a vase, the music in a festival revealed the surplus that reached beyond man's immediate purpose. It is evident that such an interpretation of art does not rule out the spiritual or religious insight, neither does it exclude the validity of scientific exploration; in fact, Tagore's use of the word "real" as applied to art, demands an integral view of man's creative personality.

He differentiates the objective and subjective experience of Man, and it is only in the inner emotional world does Man's creative personality belongs. Art enables man to take cognisance of his inner unity.

"Our scientific world is our world of reasoning. It has its greatness and uses and attractions. We are ready to pay the homage due to it. But when it claims to have discovered the real world for us and laughs at the worlds of all simple-minded men, then we must say it is like a general grown intoxicated with his power, usurping the throne of his king. For the reality of the world belongs to the personality of man and not to reasoning, which is useful and great but which is not the man himself."

Art is a means of communication and is universal in its appeal.

"If we could fully know what a piece of music was in Beethoven's mind, we could ourselves become so many Beethovens. But because we cannot grasp its mystery we may altogether distrust the element of Beethoven's personality in his sonata—though we are fully aware that its true value lies in its power of touching depth of our own personality."

These are some of the salient features of Tagore's philosophy of education. However, he realized that all problems of education will never be solved once and for all. There will always be a divergence between the past, present and future. The constant change calls for a perpetual effort towards reformulation of old problems, new forms of synthesis and hence a permanent education which will be tantamount to the self-realization of the individual in the context of the universal history of man.

What will be the basis of this permanent education? Amid the perpetual dialogue between Man and his environment, the constant need to reconstruct life's experience according to the needs of society, Man must learn to live happily in this apparent chaos. He must find his identity (or his reference) to a greater ideal which surpasses him. All his knowledge, diversified, specialised and conflicting, all activities of the mind, all manifestations of nature must be regarded as emanation of the one universal mind. This point of reference (call it God or as you like) will give him the unified vision of the self and the universe without which all civilization will remain a prey to disorder and chaos. Unity in the development of personality, harmony between Man and the

Universe (society, nature and the world) will be the basis of peace and happiness and progress of all times to come.

In the light of an integral view of life education is for Tagore a coordinating process which, by the harmonious development of the faculties of the mind and the body through both negative and positive experiences of life, helps the child to be a Man in the full sense of the term.

The development of an integral personality envisages the following types of education:

—*Aesthetic Education* is the most outstanding feature of this educational system. It includes art education, music, songs, dances, handicraft, appreciation and awareness of beauty of nature etc.

—*Nature Education*: The education of the child conforms to the natural laws of his growth. The beneficial influence of external nature is taken into account. Man has to develop his contact with the external world of Nature.

—*Physical Education*: Development of the body through exercises etc. is recommended.

—*Education of the Mind*: The mind has to be developed through aesthetic, nature and physical education. Besides, it has to improve its different faculties, i.e. memory, intellect, intuition, intelligence etc. Different methods are envisaged for it. It must develop imagination, enthusiasm, social and moral judgement, etc.

—*Education and Culture*: Education must help the individual to give a just appreciation of his own culture and that of his neighbour.

—*Spiritual Education*: This envisages an education which will develop the spirituality without attaching to traditional practices of religion (ex-meditation etc.). It acts as a balance between inner discipline and external freedom.

—*Education and Society*: Education must keep in close touch with the needs of the society of the time. It must develop the individual's capacity for communication, effective speech etc.

—*Education and Economics*: The economic welfare of the community and society is taken into consideration. Hence, different forms of co-operative societies, agricultural schools etc. form an important feature of this educational system. It helps the child to grow self-sufficient economically.

—*Education and Politics*: The child must learn to be a good citizen. Democratic experiences are provided in the school in the form of student's active participation in the governing bodies of the university. Social services for the youth are a part of this education.

—*Education for Peace*: It must develop a unitive vision of man and the world. Understanding of one's own culture and that of the world is to be cultivated. The idea of the unity of the world is stressed.

—*Permanent Education*: This helps the individual to develop his capacity for change and to adapt itself to new situations, i.e., the power of learning continually.

Curriculum

Based on a unitive vision of man, it meets the needs of the child and society.

- It is balanced, coordinates the training of different faculties;
- Subjects are inter-disciplinary;
- Matter and manner are coordinated;
- Balance is maintained between past (heritage and culture), present requirements and preparations for the future stages;
- It meets the need for democratic experiences in school organisation.

Subjects taught

- Mother tongue;
- Humanities*: Foreign languages, philosophy,

religion, literature, history;

—*Current affairs*: Effective speech and communication.

Methods

Project methods, school laboratories, learning by doing i.e. learning through play and various activities.

In conclusion, much can be said for and against such an education in our modern economic and competitive societies. However, to sum up, what it stands for even today, "Visvabharati symbolises the meeting of East and West". The lessons taught by Tagore are lessons of sympathy and goodwill and that true happiness of individuals and nations is identified with the highest good of mankind. □

Science, Technology and Society

(Continued from page 1155)

Gandhian concept

The question then arises if we are not able to meet the demand for work of those who have gone through our schools and colleges even at the present level of literacy how are we going to meet the demand when we attain a hundred per cent literacy. Alternatively, will the socio-political system accept a situation where the major part of our population will be committed to unskilled manual labour for ever as drawers of water and hewers of wood?

The teachings of Mahatma Gandhi provide us with an answer. Whereas in both the socio-economic systems, I have described, it is machine and not man who controls the other, it was Gandhiji who thought of developing a socio-economic system based on man at the centre of the scheme of things. The Gandhian system of production essentially consists of a highly decentralised productive system where concentration of power either in the State or in any class of people whether it is capitalist proletariat or intellectual does not take place. His approach which he practised himself in the institutions he set up was relevant to a particular situation obtaining at that time and may look to some people not so relevant today or in the future. I do not subscribe to this view. Few of our economists, scientists or technologists have developed the basic concept of Gandhian approach, so as to modify and adapt them to suit a growing modern technological society.

Agriculture

Indian Society is still essentially a rural one based on agriculture as its main activity. About three-

fourths of the population who live in the villages depend upon agriculture and related industrial occupations. By and large this community has remained outside the pale of modern technological development. It is only lately that some changes have taken place in Indian agriculture, and products of science and technology are being increasingly used. High-yielding new varieties of seeds based on genetic research, fertilisers produced in giant factories, pesticides and insecticides made by sophisticated chemical processes, tractors, electrical and diesel pumping sets which are products of modern engineering workshops have made significant impact on Indian agriculture.

Technological gadgets like the transistor, radio bicycle, motion pictures have made great inroads into the interior of the Indian rural scene. Every villager today knows the value of trucks, buses and the railways as his aids for transportation of what he produces and also for him and his family. Apart from the bullock cart which he still uses for his immediate requirements these means of transportation based on technology have made him socially and economically more mobile.

It should not be surprising that in the next few years, the use of scooters becomes more and more common even on the village roads. The social impact of the various technological developments I have recounted has not been adequately studied even in qualitative terms.

It is said that science and technology will modernise our society and make us rational in our outlook discarding superstitions, ignorance and obscurantism, etc. Jawaharlal Nehru was a great believer in this and spoke often of scientific temper. But after thirty years of phenomenal support to science and technology and after acquiring some of the materialistic attributes of certain sophistication in science and technology, the temper of science seems to have remained elusive. □

[Courtesy : The Mail]

President inaugurates Anna University of Technology

The President, Shri N. Sanjiva Reddy while inaugurating the Perarignar Anna University of Technology in Madras said investment in education was a social necessity, the benefits of which could not be quantified in monetary terms. He observed that investment at all levels in the field of technical education was a basic investment directed towards socio-economic development over a broad spectrum of nation-building activity.

The President said India was one of the top ten industrialised countries in the world and was in a happy position to make available not only technical expertise and specialised experience but also a large variety of scientific and engineering goods. Indian tech-

from the duty of learning. Students ought to evince interest in cultivating knowledge and should not be misled by politicians. Technical knowledge could help in removing the inequalities and the ushering in socialism.

The Governor, Mr. Prabhudas Patwari hoped that the technological university would soon acquire a place of pride in India and abroad. Though India ranked third in scientific and technical manpower, the benefits of science and technology had not reached the masses.

Mr Patwari said that the appropriate technology for India was one which recognised the limitations of our resources and generated massive employment.

Regional meet to discuss teaching of Russian

The Central Institute of English and Foreign languages will organise a regional conference to discuss the problems relating to teaching of Russian language in the countries of Asia and Africa in November 1978 in Hyderabad. The conference will be attended by delegations from eleven countries including Nigeria, New Zealand, Syria, Sudan and USSR.

An international exhibition depicting the achievements of various countries including the USSR in the field of teaching Russian language and literature, textbooks, monographs and the latest teaching aids will also be held at the time of conference.

JNTU organises population education cell

The Jawaharlal Nehru Technological University has established a Population Education Cell in collaboration with the Family Planning Association of India. The Advisory Committee of the Cell headed by Vice-Chancellor, Shri M. V. Rajagopal at its first meeting held recently in the university made the following recommendations:

1. to introduce population education as an elective subject in the B.Tech. curriculum under the department of humanities;
2. to establish Population Education Clubs in the colleges and Youth Clubs in villages adopted by the N.S.S. Units;
3. to take assistance of N.S.S. in planning and implementing the out-of-school youth programmes; and
4. to collect and popularise the literature and other useful material on population education suitable to rural masses who are unaware of the population dynamics.

The Advisory Committee decided to seek the assistance of the State Directorate of Health Services and such other agencies for obtaining the audio-visual aids and literature for propagation of the programme.

CAMPUS NEWS

nical experts were sought for not only under bilateral arrangements but also under the auspices of international agencies. Our efforts over the years since independence have placed us in an advantageous position. Our need for importation of technical know-how except in very highly specialised areas is marginal.

The President said the Technology University marked another landmark in the progress of technical education in Tamilnadu. He hoped that the new university would promote and foster specialisation in all branches of science and technology for the betterment of mankind.

Tamil Nadu Chief Minister, Mr M. G. Ramachandran in his presidential remarks reminded the youth that future was in their hands and they should not stray

Technologies based on alien concepts could accomplish little. He recalled Gandhiji's words that it was not mass production but production by masses that was required. Village industries should be developed to stop the exodus to towns and cities.

The Vice-Chancellor of the university, Mr P. Sivalingam said universities were faced with the problem of expansion and the number of people seeking technical education had increased. Universities tended to lose their flexibility and resilience on account of their unwieldy nature. The traditional general purpose university was no longer adequate to meet the needs of the several non-traditional disciplines which had emerged now. The present need was therefore for agricultural and technological universities.

Saugar organises summer institute in Geomorphology and Photogeology

The Department of Applied Geology of the University of Saugar organised the all-India Advanced Level Summer Institute on Geomorphology and Photogeology at the university under the directorship of Prof. U. Aswathanarayana.

The instruction at the Institute was provided by leading experts in the field including Professors R. Vaidyanathan (Andhra University), V. Subramanyan (IIT, Bombay), D. Niyogi (IIT Kharagpur), V.K. Verma (Delhi University), R.P. Singh (Magadh University), N.P. Ayyar (Shivaji University), Dr. Baldev Sahai (Space Applications Centre, Ahmedabad) and Sarvashri J.G. Krishnamurthy (AMSE, Bangalore), and K. Krishnan Unni (GSI, Calcutta). The methodology, techniques, instrumentation, interpretation, case history in respect of geomorphology, photogeology and remote sensing were comprehensively covered in the instruction. Particular attention was paid to the application of these techniques in mineral (including bauxite and ground-water) prospecting and land-use planning. Dr. S.N. Pandey of the University made a useful innovation in instruction by providing to each group of three participants, a space image aerial photograph, toposheet and geological map of the area around Jabalpur and made them check the ground truth in specific areas earmarked for each group. Technical movies on earth science topics were screened for the benefit of the participants.

The participants have been given a gift of space image of the area of their individual choice so that they can pursue their research with the skills acquired during the Summer Institute.

Dr. V.S. Krishnaswamy, Director-General, Geological Survey of India in his valedictory address drew the attention to the signi-

ficance of geomorphology, photogeology and remote sensing in resource surveys and monitoring of environment and the importance of training cadres in these emerging areas.

Thirty participants mostly university and college teachers in geology and geography including senior officers from the Geological Survey of India, Directorate of Mines and Geology, Birbal Sahni Institute attended the seminar sponsored by the University Grants Commission.

Plea to teachers for dedicated work

Shri Sadiq Ali, Maharashtra Governor and Chancellor of State Universities appealed to the teaching staff of Marathwada University to create an atmosphere of dedication for the pursuit of knowledge.

The Chancellor reminded the teachers that the country was engaged in an exciting task of building a new India and teachers had an important role to play. He said that even with the present system of education, the country had produced a large number of competent technicians, doctors, engineers and other qualified personnel of world class. This proved that India was not lacking in diverse talents.

There was nothing wrong in acquainting the students with political systems and ideologies of different political parties. The Governor, however urged that students should not involve themselves in active party politics.

Fellowships for study in Australia and USSR

The Union Ministry of Education and Social Welfare have invited applications for award of fellowships for postgraduate

studies/research in Australia and USSR.

The Commonwealth fellowships for study in Australia are open to postgraduates in Dairy Technology and Soil Engineering with minimum teaching or research experience of two years in the field.

Postgraduates in engineering, agriculture, mathematics, architecture are eligible for award of fellowships for study and training in USSR in Russian language translation techniques.

The Department of Education in the Ministry will receive applications upto 21st September, 1978 in the case of Commonwealth fellowships and upto 25th September, 1978 in the case of fellowships in USSR.

Patna introduces Home Science course

Patna University is planning to introduce postgraduate teaching in Home Science from the current academic session. The decision was taken at a recent meeting of the Academic Planning Board of the University.

The Principal of the Patna Women's College agreed to house the postgraduate department of Home Science in its campus.

The University Grants Commission had sanctioned a grant of Rs. two lakhs to the university for starting postgraduate teaching in Home Science.

SNDT institutes science faculty

The S.N.D.T. Women's University has introduced a postgraduate diploma course in Analytical Chemistry at Shri Hansraj Pragji Thackersey College of Science under the newly constituted science faculty of the university. The course is essentially vocation-oriented and the curriculum is so framed that the students will find their training of relevance in industries where analytical chemistry plays an important role in production. It is proposed to provide two electives initially—pharmaceuticals and foods.

Study of History: New orientation urged

Prof. S. Gopal, Head of the Centre for Historical Studies of Jawaharlal Nehru University in his inaugural address to the third session of the Andhra Pradesh History Congress in Vijayawada called upon historians to study the history of nationalist movement of India in new context of country and with the help of new methodology available to scholars.

Prof. Gopal referred to the thriving school of thought in Britain which depicted the freedom movement in terms of factions and cliques or patrons and clients. One should not merely laugh at such depiction but refute it in a conceptual frame. The U.K. school suggested that caste did not matter at all in political organisations. Historians in this part of the country should analyse how the Justice Party contributed a number of Chief Ministers of the composite State of Madras.

He commended the study of regional history because it could be limited to space and time. In addition study of subjects like the peasant movement and trade unionism would be topical. The historian should not lose sight of the impact of all India forces at work in the process.

Prof. Gopal also referred to the drastic change in the con-

cept of history in the last thirty years. It was no longer an account of dynasties of chronology of events. It was an analysis and interpretation of social process and changes. A historian had to use auxiliary disciplines of social sciences. Although history could not obviously be an exact science, it was a scientific discipline.

He said 'no man is value free'. If anybody says he is approaching history with an open mind either he is not conscious of his subjectivity or concealing his subjectivity. But conscious subjectivity was an asset. Data banks and computers never provided the answer. He referred to the two American historians who fed a computer with all the data about slavery in the United States and were given the finding that slaves were extremely happy and it was better to live in slavery than in freedom. If anybody pretends to be without values he will get such answers.

Prof. Gopal urged for recasting the university syllabus in history in tune with the new wave of thinking. Greater emphasis should be laid on social and economic trends.

An exhibition of books and material of archaeological interest was organised on the occasion.

Dr. S.R. Rao, Jawaharlal Nehru fellow, on the other hand, has said that the script is very close to Vedic Sanskrit and Indo-Iranian and not Dravidian as held by Russians.

Dr. Sankalia said that during the last hundred years and particularly after the excavations in Iran and Mesopotamia, it has been conclusively shown that the beginning of the civilisation might be traced back to about five thousand B.C.

However, according to late Rev. Father Heras of Bombay, Mesopotamian, Hittite, Egyptian, Minoan and other less known "proto-historic" cultures were derived from Southern India because he believed that Dravidians had gone there.

Dr. Sankalia maintained that nothing had so far been found in India to substantiate Father Heras theory. On the other hand the beginning of civilisation in Western Asia continued to march backward in time with "astounding" discoveries of the city of Catal Hayak, in Turkey dated by the Carbon-14 technique to six thousand B.C.

While Father Heras assumption that authors of the Indus civilisation or their ancestors were Dravidians might be correct, it was not possible to believe that these proto-Dravidians were South Indians in origin. Dr. Sankalia said the likelihood was, as held by several scholars, that these proto-Dravidians were not Indian in origin but possibly earlier residents of Southern Iran and parts of Europe.

The assumption that the Indus civilisation was proto Dravidian might stand but the way this culture reached Southern India needed to be explained.

Dr. Sankalia said while referring to the use of computer by the Russians to decipher the Indus script, that the foremost question to be decided was whether each photograph in the Indus script was unit of pronunciation or formed a word. He said such questions could not be answered by a computer.

Research on Indus Valley Culture

Eminent archaeologist, Dr. H. D. Sankalia said in Pune that he did not subscribe to the Russian theory that the Indus script is Dravidian in structure. He said deciphering of Indus seals and scripts which offered crucial clues to the understanding of the Indus Valley culture still remained a major challenge to the scholars. He had, however, a word of

praise for the Russians for having done a systematic attempt through the aid of computer to decide the Indus script. Dr. Nikita V. Gurov, an archaeologist at Leningrad University who pioneered computerised study of the Indus script has claimed that the Indus people were Dravidians in origin and were driven out to the south by the invading Aryans.

Call to free education from outside interference

Dr. P. C. Chunder, Union Education Minister while addressing the tenth conference of All India Federation of University and College Teachers' Organisations in Calcutta made an appeal to the university and college teachers to keep the academic sphere free from the interference of extraneous influences.

He said that there was a feeling among a section of people that higher education had failed in achieving its objectives. A general survey would however reveal that this was not wholly true. A large number of scientists and engineers have been produced by the higher academic bodies and they have contributed towards the country's overall development.

Dr. Chunder said that criticism regarding the elitists character of higher education was partly true and this along with several other factors were responsible for the crisis in the academic sphere that had developed in different parts of the country. The students' unrest erupting from time to time symbolised this critical situation.

He said one of the factors that led to the deepening of the crisis was the haphazard growth of some colleges where outside interference had vitiated the academic atmosphere.

Dr. Chunder said it was a fact that till now they failed to provide universal elementary education. There were 6.5 crore children of school-going age and 33 crore illiterate adults in the country, who had to be provided elementary education. Besides there were problems relating to drop-outs.

West Bengal Chief Minister, Mr. Jyoti Basu who addressed the conference said that it was no use copying the education system of other countries. Our pattern of education should be based on our own traditions and on the prevailing situation in the country. He said since India was a vast country having diverse cultures there should be central

coordination and educational planning.

Mr. Basu said that often students resorted to unfair means in examinations. It is no use blaming the students only. He felt that for this the guardians, teachers and students are equally responsible.

The Chief Minister said that the method of consultation with the representatives of mass organisations was in an experimental stage but he had no doubt with the cooperation of these representatives including teachers organisations, the government would succeed in achieving the targets.

IIT to develop eight hamlets

The Indian Institute of Technology, New Delhi has adopted eight hilly hamlets of Sohna block of Gurgaon district for integrated development. The Haryana Government and Gurgaon Development Agency will provide infrastructural and administrative facilities. The State Bank of Patiala has agreed to set up a branch in one of these villages to cater to the financial requirements of the individual beneficiaries identified by the staff and students of the Indian Institute of Technology.

Kashmir introduces B.Ed. correspondence course

The Institute of Correspondence Courses of the University of Kashmir has introduced a vacation school-cum-correspondence course for award of B.Ed. degree from the current academic session. Teachers who have three years experience are eligible for admission to the course.

The details of the course can be had from Director of the Institute located in Kashmir University Campus.

Move to insure sportsmen

The All-India Council of Sports has recommended to the govern-

ment that sportsmen selected to undergo coaching in preparation for the forthcoming Asian Games be insured against any injury during the training period.

Field Marshal S. H. F. J. Manekshaw said that when we were spending so much in preparing and sending the team we should also be able to spend a little more in protecting the future of sportsmen and women.

Osmania to host Science Congress

The Osmania University will host the sixty-sixth Indian Science Congress early next year.

The Prime Minister, Mr. Morarji Desai will inaugurate the general session of the Congress.

Thirteen subject Committees from the Faculties of Science, Engineering and Technology, Agriculture, Home Science, and Medicine will hold individual sessions. Original research papers will be presented and discussed in the subject sessions.

Prof. T. Navaneeth Rao, Head of the Department of Chemistry, Osmania University has been nominated local Secretary of the Congress.

Teachers' Day Messages

President N. Sanjiva Reddy said in his message on the occasion of the Teachers' Day that the teacher should be given proper status and emoluments commensurate with the nation-building task he is called upon to perform. The President made an appeal to countrymen to contribute liberally to the National Foundation for Teachers' Welfare.

Prime Minister, Shri Morarji Desai said in his message that a teacher's role in forming the character of the child is next to that of parents.

Union Minister for Education and Social Welfare, Dr. P. C. Chunder observed that the teacher is a man who makes the nation. The teacher should be remembered with reverence.

Book bank service

Mr. Prabhu Das Patwari, Governor of Tamil Nadu while inaugurating the 'Book Bank Project' of the Rajasthan Youth Association in Madras appealed to youth organisations to take interest in the village adoption programmes. He stressed the need to extend benefit of the scheme to students in rural areas.

The Governor described the Book Bank project as a meritorious service and noble mission which enabled deserving students to get the books they needed. He pointed out that spread of education was one of the best and highest donation a man could give. He hoped the Association would extend this service to cover the students in rural areas. He advised students availing the benefits from the project to take proper care of books and return them for benefit of other students.

He said his experience with students all these years has been happy. The students have been found responsive to a good cause provided they were given proper guidance and leadership.

Mr. C. Aranganayakam, Tamil Nadu Minister for Education in his presidential address assured government support to the Association to extend its activities to other areas of the State.

Mr. P. Bandari, President of the Association in his welcome address said this was the fifteenth occasion they were distributing books to students in colleges in the city and suburbs. There were two thousand five hundred students who were pursuing their studies with the textbooks supplied by the Association. The members of the Association have also gone to the rescue of the people affected by the natural calamities.

Mr. Shantilal D. Jain, Chairman of the Book Bank project in his report said more than one thousand students would benefit this year from the project which was started in 1964 with twenty-five students of two colleges. They had so far helped eight thousand students. Their aim was to

see that no college student was deprived of studies for want of textbooks.

Stress on continuous education for doctors

Dr. K.S. Shadaksharappa while inaugurating the annual refresher course of the Indian Medical Association in Bangalore said it was imperative for doctors to keep abreast of fast changing medical knowledge.

He said very little attention was being given to medical students once they completed their academic courses and in consequence there was no continuous education for practising doctors.

He regretted that the government agencies took little interest in the annual refresher courses and had not taken the initiative to nominate doctors serving in rural areas to attend the course. Dr. Shadaksharappa felt that it will be the rural doctors who would benefit most from such courses and consequently the rural population.

President of the Indian Medical Association, Dr. Giri Rajan said it was unfortunate that very few doctors in the city participated in the activities of the association. He felt the profession would be better served if more doctors came forward and initiated discussions or volunteered to give talks on subjects of their own interest. He urged the young doctors to make use of the forum. Dr. Rajan thanked the Bangalore University for its gesture of grant for the course.

Textbooks to promote Sanskrit

Dr. P.C. Chunder, Union Education and Social Welfare Minister while presiding over the Sanskrit Day celebrations in New Delhi stressed the need to prepare sanskrit textbooks in simple language for promotion and development of the language. Dr. Chunder highlighted the importance of sanskrit in understanding the Indian civilization, culture and history. Sanskrit being the base of almost all Indian language

ages should be taught along with the mother-tongue. The Minister advised the scholars to intensify research efforts in this direction.

Dr. Chunder said the interest in sanskrit was not limited only to India and European countries but had spread in the United States as well. He wanted that a Central Sanskrit Library and a Documentation Centre may be set up to enable the scholars to conduct research and pursue higher studies in the language.

The Minister said special care

Presonal

1. Dr. H. N. Yadav has been appointed Vice-Chancellor of Mithila University.
2. Dr. N.L. Nadda has been appointed Vice-Chancellor of Ranchi University.
3. Dr Mohammed Abrar Husain has been appointed Vice-Chancellor of Kanpur University.
4. Dr. D. D. Pant has been appointed Vice-Chancellor of Kumaon University.
5. Mr. G. R. Damodaran has been appointed Vice-Chancellor of Madras University.
6. Mr. P. Sivalingam has been appointed Vice-Chancellor of Perarignar Anna University of Technology.
7. Dr. R. K. Varshney, Professor of Electrical Engineering at the Punjab Agricultural University has been selected for National Systems Award for the year 1978.
8. Dr. V. Krishnamurthy, Professor of Mathematics and Deputy Director at BITS has been awarded National Fellowship in Mathematics.
9. Dr. S. P. Kaushik, Assistant Professor in Surgery at the P.G.I., Chandigarh has been awarded the Dr B.S. Kaushal Gold Medal for 1978-79.
10. Mr. R. Vishwanathan, Professor Emeritus of Vallabhbhai Patel Chest Institute has been awarded the Carlo Forlami gold medal.

should be taken to preserve and publish rare sanskrit manuscripts which were lying uncared.

The Sanskrit Day was organised jointly by the Ministry of Education and Social Welfare, Rashtriya Sanskrit Sansthan and Shri Lal Bahadur Shastri Kendriya Sanskrit Vidyapeeth.

Ph.D. thesis in Tamil

The first thesis in Tamil on 'Toxic nature of Fungi' for award of Ph. D. degree in science was submitted to the Madras University recently.

Mr Mohan Namasivayam completed his research work under the guidance of Dr. E.R.B. Shanmugasundaram, Senior Professor of Biochemistry in the University. Technical terms have been retained in the thesis for the more difficult words like 'enzyme' and Tamil equivalents have been used in other cases.

Dr. Shanmugasundaram said that hereafter every alternative thesis from his department would be in Tamil. The idea was to make common man learn about the new discoveries. He said the university rules did not specify the language in which a thesis was to be submitted.

M. Phil courses at ISM

M. Phil courses in Applied Geology and Applied Geophysics have been introduced at the Indian School of Mines from the current academic session.

According to the guidelines laid down by the University Grants Commission, candidates for the doctorate degree in humanities and science disciplines are required to undergo some course work relating to methodology and instrumentation techniques and advanced reading in the relevant subject topic. M. Phil courses are normally of two semesters and the work is given credit if the candidate proceeds for the Ph. D. degree. The course provides for grant of a terminal degree in case a research scholar cannot complete his work for the doctoral degree.

The Indian School of Mines plans to offer M. Phil courses in the basic science disciplines of Physics, Chemistry and Mathematics within a year.

Stress on coordinating education with culture

The Working Group set up by the Union Ministry of Education has recommended the reorientation of the curricula at the secondary stage in order to imbibe cultural component. It has stressed the need for a coordination machinery to link education at all levels with the work of cultural institutions. It has also recommended the establishment of a central board to ensure effective coordination between educational planning and cultural development.

The working group has urged the government to set up a 'national endowment of arts' for promotion of research in traditional folk forms. The report recommends the establishment of a commission on art education for studying the cultural component of education and the condition of art schools.

The report calls for steps to be taken to develop expertise in the field of archaeology, museology and the various traditional arts and crafts. The award of fellowships to encourage studies in paleography, epigraphy has also been suggested.

The working group has further suggested investment for study of the languages which are becoming extinct—Barunji, Modi, Rajasthani old Bagri, ancient Meitei and Nasik.

Nehru literacy award

The 1978 Nehru Literacy award of the Indian Adult Education Association has been given to Mr. G. K. Gaokar for his outstanding contribution to the promotion of literacy and social education in the country.

Mr. Gaokar is the author of several books for neo-literates and books on functional literacy.

Adult education seminar

All-India Seminar on adult education recently held in New Delhi has recommended the establishment of a management information system, for monitoring the national adult education programme.

The seminar was attended by over forty participants including

representatives of the Planning Commission, voluntary organisations, academics and government officers.

ICAR Fellowships

The Indian Council of Agricultural Research has invited applications for senior Research Fellowships for study and research leading to award of Ph. D. degree in the field of agriculture; animal sciences, agricultural engineering and home science. The fellowships are tenable at any Agricultural University/ICAR Institute or any other recognised institution of research. The Council will entertain applications upto 30th September 1978.

THE UNIVERSITY OF KASHMIR, SRINAGAR

Advertisement Notice

1. Applications in the prescribed form which can be had from the Registrar, University of Kashmir, Hazratbal, Srinagar-190006 on payment of Rs. 6 in cash or by sending crossed Postal Order drawn in favour of the Registrar cashable at Srinagar Post Office are invited for the four posts of Readers for the Centre of Central Asian Studies in the pay scale of Rs. 1200-50-1300-60-1900 plus allowances under rules. These applications should reach the undersigned by 30th September, 1978.

II. Qualifications

(a) Must provide proof of having done research in any relevant aspect of the Central Asian region, or on Kashmir. A high degree of literary proficiency is required in Kashmiri for the first post, in Sanskrit for the second post and Persian for the third post. For the fourth post the candidates must possess special qualification or proof of competence in museology.

(b) Good academic record with a doctoral degree or equivalent published work. Evidence of having actively engaged in (i) research or (ii) innovation of teaching methods or (iii) production of teaching materials.

About five years experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position. This condition can be relaxed in the case of candidates with outstanding research work.

III. While making a request for the application forms, the applicants are advised in their own interest to send their curriculum vitae.

IV. The departmental boundaries shall not confine the teaching or research work of teachers and as such a teacher meant for a particular department may be required to take up teaching/research assignments in other departments.

Snif-ud-Din Soz
REGISTRAR

Conferences, Seminars and Workshops

September—November 1978

Date	Title	Venue	Sponsoring Body
17 Aug-19 Sept	Autumn Institute on computer based numerical algorithms	Bangalore	Indian Inst of Science
21 Aug-14 Oct	Second training course in handling and application of radioisotopes	Hyderabad	Hyderabad Science Society
28 Aug-8 Sept	Introduction to Management Accounting	New Delhi	Indian Inst of Public Admin.
30 Aug-12 Sept	Social policy and administration	New Delhi	Indian Inst of Public Admin.
2 Sept-4 Sept	Indian Society of Gastroenterology, annual conference	Simla	I.S.G.
4 Sept-6 Sept	5th National systems conference	Ludhiana	Dept of Elec Engg, Punjab Agricultural University
4 Sept-9 Sept	International Conference on Raman Spectroscopy	Bangalore	Raman Research Institute
4 Sept-9 Sept	Management Science applications in Health & Family Welfare	Bangalore	Indian Inst of Management
4 Sept-9 Sept	Management information systems for mining industry	Dhanbad	Indian School of Mines
9 Sept-10 Sept	Symposium on clinical pharmacokinetics	Pondicherry	Jawaharlal Inst of PG Medical Education & Research
10 Sept-12 Sept	International Congress on Prevention of heart disease and cardiac rehabilitation	Bombay	
11 Sept-16 Sept	Linear programming applications	Bangalore	Indian Inst of Management
11 Sept-20 Sept	Occupational and mental health in industry	Bangalore	Indian Inst of Management
11 Sept-23 Sept	Introduction to operations research	New Delhi	Indian Inst of Public Admin.
12 Sept-17 Sept	Workshop on development and strengthening of mental retardation programme	New Delhi	W.H.O.
18 Sept-29 Sept	Maintenance Management	Bangalore	Indian Inst of Management
18 Sept-30 Sept	Management information systems	New Delhi	Indian Inst of Public Admin.
20 Sept-7 Oct	Budgeting & financial control	New Delhi	Indian Inst of Public Admin.
21 Sept-23 Sept	Seminar on educational policy (for Vice-Chancellors)	Hyderabad	Admin Staff College
21 Sept-23 Sept	Workshop on ancient Indian Sculptural Studies: a search for alternative frameworks	Gwalior	Jiwaji University
21 Sept-14 Oct	Advanced study institute on ferrous foundry technology	Bangalore	Indian Inst of Science
23 Sept-27 Sept	5th Asian & Australasian Congress of Anaesthesiology	New Delhi	
25 Sept-30 Sept	Administrative Law	New Delhi	Indian Inst of Public Admin.
25 Sept-30 Sept	Management of Public Systems	Bangalore	Indian Inst of Management
25 Sept-30 Sept	Seminar on economic justification of NC Machines	Bangalore	Central Machine Tool Institute
25 Sept-1 Oct	New development in political science: a refresher course for lecturers	Amritsar	G.N.D. University
27 Sept-30 Sept	Seminar on safety in aviation	New Delhi	Instn of Engineers (India)
28 Sept-2 Oct	9th International Congress of the International Society for Heart Research	New Delhi	School of Environmental Sciences, J.N.U.
September 1978	Education and social change in Himachal Pradesh	Simla	School of Edn, H.P. University
September 1978	National design engineering conference	Madras	I.I.T.
Sept-Oct 78	All India Workshop on planning research projects and designing research tools in education	Sagar	Univ of Saugar, Faculty of Education
3 Oct-6 Oct	53rd Indian Philosophical Congress	Patiala	Punjabi University
3 Oct-7 Oct	Operations research and Computers	Bangalore	Indian Inst of Management
4 Oct-5 Oct	Asian Regional Seminar on Science & Technology for development	New Delhi	Indian National Science Academy
5 Oct-1 Oct	Sixth symposium on Earthquake Engineering	Roorkee	Indian Society of Earthquake Technology, Univ of Roorkee
9 Oct-18 Oct	Management of Hospitals & Health Care Delivery Institutions	Bangalore	Indian Inst of Management & St John's Medical College
16 Oct-18 Oct	Symposium on structure, bonding reactivity of inorganic compounds	Bangalore	Indian Inst of Science
16 Oct-27 Oct	Materials Management	Bangalore	Indian Inst of Management
18 Oct-22 Oct	Seminar on Computer applications in power systems	Calcutta	Instn of Engineers (India)
18 Oct-22 Oct	Seminar on technology as the decisive factor of economic development	Bombay	Max Muller Bhavan
20 Oct-4 Nov	Coherent optics and its applications in communications	Bangalore	Indian Inst of Science
20 Oct-4 Nov	Workshop in digital processing of geophysical maps	Bangalore	Indian Inst of Science
23 Oct-27 Oct	3rd All India Congress of cytology and genetics	Hissar	Dept of Zoology, Univ of Kalyani

Date	Title	Venue	Sponsoring Body
24 Oct-28 Oct	Rural Marketing	New Delhi	Indian Inst of Management, Bangalore
24 Oct-28 Oct	Workshop on question banking of strength of materials	Baroda	MS Univ of Baroda
27 Oct-28 Oct	Symposium on chromosome dynamics	Hissar	Haryana Agricultural University
29 Oct-4 Nov	5th international congress on hormonal steroids	New Delhi	Dept of Reproductive Biology, AIIMS
1st week Oct	Recent trends in research methodology	Hyderabad	Osmania University
Mid-Oct 1978	Seminar on problem of organised crime	Amritsar	GND University
October 1978	All India Symposium on Ecology of animal populations	Calcutta	Zoological Survey of India
Oct (Last week)	Seminar on Ayurvedic drug research	Jamnagar	Gujarat Ayurved University
October 1978	Refresher course in modern political analysis	Srinagar Garhwal	Garhwal University
October 1978	Summer Institute in Economics	Muzaffarpur	University of Bihar
October 1978	Summer Institute in political science	Muzaffarpur	University of Bihar
Oct/Nov 1978	Seminar on Government & politics in India	Pune	Tuljaram Chaturchand College
Oct/Nov 1978	Summer Institute in comparative studies of modern Hindi and S. Indian Literature	Tripunithura	University of Cochin
1 Nov-21 Nov	Short term institute in Bryology	Annamalainagar	Annamalai Univ, Botany Dept
1 Nov-29 Nov	Refresher course in mathematics	Srinagar	University of Kashmir
3 Nov-6 Nov	Coomarswamy Seminar	Chandigarh	Panjab University
5 Nov-1978	Workshop on blood banking, enzymopathy & haemoglobinopathies	Bombay	Seth GS Medical College, Parel & WHO
6 Nov-7 Nov	The regulation of gonadal functions	Bombay	Ins for Research in Reproduction, ICMR & WHO
6 Nov-7 Nov	Tutorial seminar on Satellite Communication systems	Delhi	I.E.T.E.
6 Nov-7 Nov	Workshop on new techniques in neuro sciences (with special reference to the neurophysiology of the higher nervous activity)	Bangalore	Nat Inst of Mental Health and Neuro Sciences
6 Nov-8 Nov	Interdisciplinary teaching in the field of life sciences and the role of microbiology	Baroda	MS Univ, Faculty of Science
6 Nov-8 Nov	Symposium on brain pituitary adrenocortical inter-relationships	Varanasi	Inst of Med Sciences, B.H.U.
6 Nov-10 Nov	Management information systems	Bangalore	Indian Inst of Management
6 Nov-18 Nov	Personnel Management	New Delhi	Indian Inst of Public Admin.
6 Nov-20 Nov	Catalytic reaction engineering	Bangalore	Indian Inst of Science
6 Nov-20 Nov	Deep foundations	Bangalore	Indian Inst of Science
6 Nov-25 Nov	International Seminar on remote sensing applications for agriculture	Dehradun	UN (F.A.O.) & Nat. Remote Sensing Agency
	*(one week in each place)	Secunderabad	
6 Nov-8 Dec	Refresher course in chemistry	Ahmedabad	Univ of Kashmir
8 Nov-11 Nov	International conference on mental health information systems	Srinagar	W.H.O.
8 Nov-15 Nov	XI World Conference of the International Council for Correspondence education	New Delhi (Ashoka Hotel)	I.C.C.E.
13 Nov-18 Nov	Management in educational institutions	Bangalore	Indian Inst of Management
14 Nov-25 Nov	Seminar on Management of human resources	Hyderabad	Administrative Staff College
15 Nov-25 Nov	Computers in Management	New Delhi	Indian Inst of Public Admin.
15 Nov-15 Dec	Refresher course in Zoology	Srinagar	Univ of Kashmir
16 Nov-17 Nov	National Seminar on immobilised enzyme engineering	Calcutta	Jadavpur University
20 Nov-23 Nov	International seminar on approaches towards increasing the potato production in developing countries	Simla	Indian Potato Association
20 Nov-25 Nov	Materials Planning	New Delhi	Indian Inst of Public Admin.
25 Nov-16 Dec	Course in Molecular biology and genetics	Bombay	Seth GS Med College, Parel
27 Nov-29 Nov	National Conference on quality & reliability	Bombay	Mathematics Dept, I.I.T.
27 Nov-30 Nov	Seminar on Literary historiography of Indian Languages	Chandigarh	Sheikh Baba Farid Dept of Medieval Indian Literature, Panjab University
27 Nov-8 Dec	Development administration	New Delhi	Indian Inst of Public Admin.
November 1978	All India Seminar on applied physics	Baroda	Applied Physics Dept, MS Univ
November 1978	Epidemiology of arbovirus infections	Pune	Virus Res Centre, Pune
November 1978	Seminar on engineering and health care	Mysore	Instrument Soc of India, Indian Institute of Science, Bangalore
November 1978	Seminar on Journalism	Mysore	University of Mysore
November 1978	Tenth Indian rubber conference	Baroda	Indian Rubber Manufacturers Res Assn
November 1978	Workshop on geographical aspects of rural development planning	Kolhapur	Shivaji University
November 1978	Workshop on inter-disciplinary teaching in the field of life sciences and the role of micro-biology in this context	Baroda	MS University of Baroda
November 1978	Workshop on involvement of voluntary agencies in family health education	New Delhi	W.H.O.
End of Nov 1978	Seminar on developments in biotechnology	Calcutta	Indian Inst of Chem Engineers
Nov/Dec 1978	Seminar on Creativity in music	Khairagarh	Indira Kala Sangit Vishwa-vidyalaya
Nov/Dec 1978	38th Annual Conference (Topics: Farming systems in hill areas; Rural credit; Evaluation of agricultural projects)	Jorhat	Indian Society of Agricultural Economics

Subject Index

Date	Title	Venue	Sponsoring Body
Agriculture			
November 1978 20 Nov-23 Nov	Epidemiology of arbovirus infections International Seminar on approaches towards increasing the potato production in developing countries	Pune Simla	Virus Res Centre, Pune Indian Potato Association
6 Nov-25 Nov	International Seminar on remote sensing applications for agriculture *(One week in each place)	* { Dehradun Secunderabad Ahmedabad	UN (FAO) & Nat. Remote Sensing Agency
Nov/Dec 1978	38th Annual Conference (Topics:— Farming systems in hill areas; Rural credit; Evaluation of agricultural projects)	Jorhat (Assam Agric: Univ.)	Indian Society of Agricultural Economics
The Arts			
3 Nov-6 Nov Nov/Dec 1978	Coomaraswamy Seminar Seminar on Creativity in Music	Chandigarh Khairagarh	Panjab University Indira Kala Sangit Vishwa-vidyalaya
27 Nov-30 Nov	Seminar on Literary historiography of Indian languages	Chandigarh	Sheikh Baba Farid Deptt of Medieval Indian Lit., Panjab University
Oct/Nov 1978	Summer institute in comparative studies of modern Hindi and S. Indian Literature	Tripunithura	University of Cochin
21 Sept-23 Sept	Workshop on ancient Indian sculptural studies: a search for alternative frameworks	Gwalior	Jiwaji University
Economics			
October 1978	Summer Institute in Economics	Muzaffarpur	University of Bihar
Education			
Sept-Oct 78	All India Workshop on planning research projects & designing research tools in education	Sagar	Univ. of Sagar, Faculty of Edn.
September 1978 8 Nov-15 Nov	Education and social change in Himachal Pradesh XI World Conference of the International Council for Correspondence Education	Simla New Delhi (Ashoka Hotel)	School of Edn., HP University I.C.C.E.
13 Nov-18 Nov 21 Sept-23 Sept	Management in education institution Seminar on educational policy (for Vice-Chancellors)	Bangalore Hyderabad	Indian Inst of Management Admin. Staff College
Engineering			
6 Nov-20 Nov 6 Nov-20 Nov	Catalytic reaction engineering Deep foundations	Bangalore Bangalore	Indian Inst of Science Indian Inst of Science
September 1978 25 Sept-30 Sept November 1978	National design engineering conference Seminar on economic justification of NC Machines Seminar on engineering & health care	Madras Bangalore Mysore	I.I.T. Central Machine Tool Institute Instrument Soc of India, Indian Inst of Science, Bangalore
- 5 Oct-7 Oct	Sixth symposium on Earthquake engineering	Roorkee	Indian Soc of Earthquake Technology, University of Roorkee
24 Oct-28 Oct	Workshop on question banking of strength of materials	Baroda	MS University of Baroda
Industry			
21 Sept-14 Oct	Advanced study institute on ferrous foundry technology	Bangalore	Indian Inst of Science
November 1978	Tenth Indian rubber conference	Baroda	Indian Rubber Manufacturers Research Association
Journalism			
November 1978	Seminar on journalism	Mysore	University of Mysore
Law and Administration			
25 Sept-30 Sept 27 Nov-8 Dec 25 Sept-30 Sept Mid-October 78 30 Aug-12 Sept November 1978	Administrative law Development administration Management of public systems Seminar on problem of organised crime Social policy and administration Workshop on geographical aspects of rural development planning	New Delhi New Delhi Bangalore Amritsar New Delhi Kolhapur	Indian Inst of Public Admin. Indian Inst of Public Admin. Indian Inst of Management GND University Indian Inst of Public Admin. Shivaji University
Life Sciences			
October 1978	All India Symposium on Ecology of animal populations	Calcutta	Zoological Survey of India
25 Nov-16 Dec 29 Oct-4 Nov	Course in Molecular biology and genetics 5th international congress on hormonal steroids	Bombay New Delhi	Seth GS Med College, Parel Dept of Reproductive Biology, AIIMS
6 Nov-8 Nov	Interdisciplinary teaching in the field of life sciences and the role of microbiology	Baroda	MS University, Faculty of Science

Date	Title	Venue	Sponsoring Body
16 Nov-17 Nov	National Seminar on immobilised enzyme engineering	Calcutta	Jadavpur University
15 Nov-15 Dec	Refresher course in Zoology	Srinagar	University of Kashmir
6 Nov-7 Nov	The regulation of gonadal functions	Bombay	Inst for Res in Reproduction, ICMR & WHO
End of Nov 1978	Seminar on developments in biotechnology	Calcutta	Indian Inst. of Chemical Engineers
1 Nov-21 Nov	Short term institute in Bryology	Annamalainagar	Annamalai Univ., Botany Deptt.
27 Oct-28 Oct	Symposium on chromosome dynamics	Hissar	Haryana Agricultural University
23 Oct-27 Oct	3rd All India Congress of cytology & genetics	Hissar	Dept of Zoology, Univ of Kalyani
November 1978	Workshop on inter-disciplinary teaching in the field of life sciences & the role of microbiology in this context	Baroda	MS Univ of Baroda
6 Nov-7 Nov	Workshop on new techniques in neurosciences (with special reference to the neurophysiology of the higher nervous activity)	Bangalore	Nat Inst of Mental Health and Neuro Sciences
Management			
20 Sept-7 Oct	Budgeting & financial control	New Delhi	Indian Inst of Public Admin.
4 Sept-6 Sept	5th National systems conference	Ludhiana	Dept of Elec Engg., Punjab Agricultural University
28 Aug-8 Sept	Introduction to Management accounting	New Delhi	Indian Inst of Public Admin.
18 Sept-29 Sept	Maintenance management	Bangalore	Indian Inst of Management
16 Oct-27 Oct	Materials Management	Bangalore	Indian Inst of Management
20 Nov-25 Nov	Materials planning	New Delhi	Indian Inst of Public Admin.
27 Nov-29 Nov	National conference on quality and reliability	Bombay	Mathematics Deptt., I.I.T.
6 Nov-18 Nov	Personnel Management	New Delhi	Indian Inst of Public Admin.
24 Oct-28 Oct	Rural marketing	New Delhi	Indian Inst of Management, Bangalore.
14 Nov-25 Nov	Seminar on management of human resources	Hyderabad	Administrative Staff College
Mathematics & Computers			
17 Aug-19 Sept	Autumn Inst on computer based numerical algorithms	Bangalore	Indian Inst of Science
15 Nov-25 Nov	Computers in Management	New Delhi	Indian Inst of Public Admin.
11 Sept-16 Sept	Linear Programming applications	Bangalore	Indian Inst of Management
3 Oct-7 Oct	Operations research and computers	Bangalore	Indian Inst of Management
1 Nov-29 Nov	Refresher course in Mathematics	Srinagar	University of Kashmir
18 Oct-22 Oct	Seminar on Computer applications in power systems	Calcutta	Instn of Enginners (India)
20 Oct-4 Nov	Workshop in digital processing of geophysical maps	Bangalore	Indian Inst of Science
Medicine & Public Health			
23 Sept-27 Sept	5th Asian & Australasian congress of Anaesthesiology	New Delhi	
2 Sept-4 Sept	Indian Society of Gastroenterology, annual conference	Simla	I.S.G.
8 Nov-11 Nov	International conference on mental health information systems	New Delhi	W.H.O.
10 Sept-12 Sept	International Congress on prevention of heart disease and cardiac rehabilitation	Bombay	
9 Oct-18 Oct	Management of Hospitals and Health care delivery Institutions	Bangalore	Indian Inst of Management & St John's Medical College
4 Sept-9 Sept	Management Science applications in Health & Family Welfare	Bangalore	Indian Inst of Management
28 Sept-2 Oct	9th International Congress of the International Society for Heart Research	New Delhi	School of Environmental Sciences JNU
11 Sept-20 Sept	Occupational and Mental health in industry	Bangalore	Indian Inst of Management
21 Aug-14 Oct	Second training course in handling & application of radioisotopes	Hyderabad	Hyderabad Science Society
Oct (Last week)	Seminar on Ayurvedic drug research	Jamnagar	Gujarat Ayurved University
6 Nov-8 Nov	Symposium on brain pituitary adrenocortical inter-relationships	Varanasi	Inst of Med Sciences, B.H.U.
9 Sept 10 Sept	Symposium on clinical pharmaco-kinetics	Pondicherry	Jawaharlal Inst of PG Medical Education & Research
November	Workshop on involvement of voluntary agencies in family health education	New Delhi	W.H.O.
5 Nov-1978	Workshop on blood banking enzymopathy & haemoglobinopathies	Bombay	Seth GS Med College, Parel & WHO
12 Sept-17 Sept	Workshop on development & strengthening of mental retardation programme	New Delhi	W.H.O.
Philosophy			
3 Oct-6 Oct	53rd Indian Philosophical Congress	Patiala	Punjabi University
Political Science			
25 Sept-1 Oct	New development in political science: a refresher course for lecturers	Amritsar	G.N.D. University
October 1978	Refresher course in modern political analysis	Srinagar Garhwal	Garhwal University

Date	Title	Venue	Sponsoring Body
Oct/Nov 1978	Seminar on Government and politics in India	Pune	Tuljaram Chaturchand College
October 1978	Summer Institute in political science	Muzaffarpur	University of Bihar
Research and Information			
11 Sept-23 Sept	Introduction to operations research	New Delhi	Indian Inst of Public Admin.
6 Nov-10 Nov	Management information systems	Bangalore	Indian Inst of Management
18 Sept-30 Sept	Management information systems	New Delhi	Indian Inst of Public Admin.
4 Sept-9 Sept	Management information systems for mining industry	Dhanbad	Indian School of Mines
1st Week October	Recent trends in research methodology	Hyderabad	Osmania University
Science & Technology			
November 1978	All India Seminar on applied physics	Baroda	Applied Physics Deptt., MS Univ.
4 Oct-5 Oct	Asian Regional Seminar on Sc & Technology for development	New Delhi	Indian Nat Science Academy/ AAAS
20 Oct-4 Nov	Coherent optics & its applications in communications	Bangalore	Indian Inst of Science
4 Sept-9 Sept	International Conference on Roman spectroscopy	Bangalore	Roman Research Institute
6 Nov-8 Dec	Refresher course in Chemistry	Srinagar	University of Kashmir
18 Oct-22 Oct	Seminar on technology as the decisive factor of economic development	Bombay	Max Muller Bhavan
16 Oct-18 Oct	Symposium on structure, bonding reactivity of inorganic compounds	Bangalore	Indian Inst of Science
Transport and Communication			
27 Sept-30 Sept	Seminar on safety in aviation	New Delhi	Inst of Engineers (India)
6 Nov-7 Nov	Tutorial seminar on satellite communication systems	Delhi	I.E.T.E.

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Additions to A.I.U. Library

- Anderson, Richard C. and others. ed. *Schooling and the acquisition of knowledge*. New Jersey, Lawrence Erlbaum, 1977. xii, 448p.
- Annand, J.B., ed. *Education for self-discovery*. London, Hodder and Stoughton, (c 1977). 96p.
- Barnes, Barry. *Interests and the growth of knowledge*. London, Routledge & Kegan Paul, 1977. ix, 109p.
- Bassett, T. Robert. *Education for the individual: A humanistic introduction*. New York, Harper and Row (c 1978). x, 406p.
- Borich, Gary D. and Fenton, Kathleen S. *Appraisal of teaching: Concepts and process*. London, Addison Wesley (c 1977). xvi, 396p.
- Bunker, Barbara Benedict and others. *Student's guide to conducting social science research*. New York, Human Sciences Press, 1975. 120p.
- Camilleri, Joseph A. *Civilization in crisis: Human prospects in a changing world*. London, Cambridge University Press (c 1976). viii, 303p.
- De, Barun, ed. *Perspectives in Social Sciences. VI. Historical dimensions*. Calcutta, Oxford University Press, 1977. xii, 227p.
- Dickinson, A.K. and Lee, P.J., ed. *History teaching and historical understanding*. London, Heinemann, 1978. viii, 176p.
- Eggleston, John. *Developments in design education*. London, Open Books, 1976. x, 138p.
- Greenbaum, William and others. *Measuring educational progress: A study of the national assessment*. New York, McGraw-Hill, 1977. xv, 238p.
- Gutek, Gerald L. *History of the western educational experience*. New York, Random (c 1972). x, 436p.
- Hunt, Sonja and Hilton, Jennifer. *Individual development and social experience*. London, Allen and Unwin, 1975. 288p.
- Jha, Akhileshwar. *Intellectuals at the crossroads: The Indian situation*, Delhi, Vikas, 1977. 112p.
- John, V.V. *Great classroom hoax and other reflections on India's education*. Delhi, Vikas (c 1978). xvi, 229p.
- Joshi, Navin Chandra. *Perspectives on higher education: Critical issues analysed*. Delhi, Ashish, 1978. 110p.
- Krishnamurti, J. *Beginnings of learning*. London, Victor Gollancz, 1975. 254p.
- Lacey, Colin. *Socialization of teachers*. London, Methuen, 1977. 160p.
- Macfarlane, Eric. *Sixth-form colleges: The 16-19 comprehensives*. London, Heinemann, 1978. viii, 245p.
- McCaughan, Nano, ed. *Group work: Learning and practice*. London, Allen, 1978. 208p.
- Price, Ronald F. *Marx and education in Russia and China*. London, Croom Helm, 1977. 376p.
- Rotman, Brian. *Jean Piaget: Psychologist of the real*. New York, Cornell University Press, 1977. 200p.
- Sarason, Seymour B., and others. *Human services and resource networks: Rationale, possibilities and public policy*. San Francisco, Jossey-Bass, 1977. xvi, 201p.
- Specht, Harry and Vickery, Anne, ed. *Integrating social work methods*. London, Allen and Unwin, 1977. 260p.
- Tinker, Hugh. *Banyan tree: Overseas emigrants from India, Pakistan and Bangladesh*. New York, Oxford University Press, 1977. x, 204p.
- Tollefson, Arthur L. *New approaches to college student development*. New York, Human Sciences Press, 1975. v, 150p.
- Unesco. *Trends in environmental education*. Paris, Author, 1977. 244p.
- Wallwork, J.F. *language and people*. London, Heinemann, 1978. ix, 174p.
- Westby, Barbara M., ed. *Sears list of subject headings*. New York, Wilson, 1977. x, 617p.
- Wooff, Terence. *Developments in art teaching*. London Open Books, 1976. xii, 117p.

A list of Doctoral Theses Accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Bhattacharyya, Pradip Kumar. Investigations on flow inside a hydracyclone. University of Calcutta.
2. Kandasami, P. Membrane analysis of linear elastic thin shells in the form of Dupin's cyclide. University of Madras.
3. Phadke, Singhu Vishvanath. Study of operators on Hilbert spaces. Shivaji University.
4. Singh, Parmanand. A critical study of the contribution of Narayana Pandita to Hindu Mathematics. University of Bihar.
5. Thrimurthy, P. Contribution to the study of Arithmetic functions. Gujarat University.
6. Ved Prakash. Some contributions to the methods of linear programming. Indian Institute of Technology, Delhi.

Physics

1. Anand Rao, B.G. Studies on the dynamics of the equatorial ionosphere. Gujarat University.
2. Basu, Amitabha. Self-diffusion in liquid metals. University of Calcutta.
3. Dhawan, Anil. Electronic conduction in TMI phosphate glasses and effect of doping molybdenum oxide in vanadate glasses. University of Delhi.
4. Gulshan Rai. Effect of sample size on the low frequency electrical behaviour of ferroelectric triglycine selenate. University of Delhi.
5. Kapur, Pawan. Modelling analysis and computer simulation study of some physiological systems. University of Calcutta.
6. Kulkarni, Raghunath Parashuram. Study of certain electronic and dielectric properties of materials. Shivaji University.
7. Malhotra, Vivek Mohan. Electron paramagnetic resonance and infra-red studies of certain rare-earth hydrates. Kanpur University.
8. Nag, Jibantanarayan. Studies in electromechanical disturbances of piezo-electric transducers. University of Calcutta.
9. Naidu, B.K. Some aspects of ternary fission of ^{235}U , ^{239}Pu and ^{252}Cf . Indian Institute of Technology, Kanpur.
10. Prabhakaran Nayar, S.R. Elastic wave propagation in crystals and lattice vibrations of A-15 compounds. University of Kerala.
11. Ramasamy, R. Evaluation of centrifugal distortion constants and other related properties of some polyatomic molecules from spectroscopic data. University of Madras.
12. Sinha, Mukul. Plasma instabilities and their non-linear stabilization. Gujarat University.
13. Sivaram, A. Laser excited fluorescence and lifetime studies of Dy^{3+} and UO_2^{2+} . Indian Institute of Technology, Kanpur.

Chemistry

1. Bajpeyi, Vishnu Swaroop. Studies on ortho-hydroxy ketoanils and their analytical use. Kanpur University.
2. Baral, S. Binuclear and trinuclear copper (II). Indian Institute of Technology, Kanpur.
3. Bhatia, Beena. Chemical and biochemical studies in relation to burns. Kanpur University.
4. Bhatnagar, Rakesh. Studies on the production of the microbial polysaccharide dextran. Kanpur University.
5. Durga Prasada Rao, M. Mechanistic studies on some organic reactions. Berhampur University.

6. Dutta, Viresh. Electronic properties of crystalline Ge-metal films. Indian Institute of Technology, Delhi.

7. Gupta, Balkishan. Structural, electrical, optical and photoconducting properties of pure and doped CdS layers produced by spray pyrolysis. Indian Institute of Technology, Delhi.

8. Jamode, Vasant Shankar Rao. Synthetic studies of nitrogen and oxygen heterocyclic compounds. Nagpur University.

9. Kapadia, J.G. Synthesis of nitrogen and sulphur containing physiologically active compounds. Gujarat University.

10. Mahalingam, V. Kinetic and mechanistic studies in oxidations with aryl iodosoacetates. University of Madras.

11. Patil, Prakash Shamrao. Studies on analytical applications of liquid ion exchangers and synergism in metal extractions. Shivaji University.

12. Pavithran, C. Studies on the metal complexes of some pyrazole and imidazole derivatives. University of Kerala.

13. Ramesh, P. Flavonoids of some South Indian plants. University of Madras.

14. Sayad Tajali Dawoodali. Studies in condensed quinoxalines and Indian medicinal plants. Shivaji University.

15. Sharma, Jawahar Lal. Study of binary and ternary complexes of tropolones. University of Delhi.

16. Sivakamasundari, A.S. Kinetic studies on the bromination of some aromatic compounds using N-bromosuccinimide. University of Madras.

17. Sivarami Reddy, B. Kinetic studies on the substituted phenolsformaldehyde reactions. University of Madras.

18. Soni, Pravinchandra Amritlal. Study of bromination and debromination in flavonoids, chalcones and aurones. Nagpur University.

19. Srinivasan, V.S. Kinetic and mechanistic studies in chlorinations with N-chlorobenzotriazole. University of Madras.

20. Tucker, Indu Bala. Studies on some transition metal complexes of substituted thioureas and triazene 1-oxide ligands. University of Delhi.

21. Wadodkar, Krishna Narayan. Synthesis in heterocyclic compounds. Nagpur University.

Earth Sciences

1. Balwant Singh. Effects of soil conservation practices on ground water recharge in the Deccan Trap formations around Rahatgarh Sagar District, M.P., University of Saugar.

2. Deshmukh, Shrikant Shridhar. A critical petrological study of the Deccan basalts and associated high level laterites in parts of the Western Ghats, Maharashtra State. Nagpur University.

Engineering & Technology

1. Madan, Mulkraj. Coal based benzole as gasoline extender and spark ignition engine fuel performance, fuel economy and exhaust emission characteristics. Indian Institute of Technology, Delhi.

2. Pandeya, Satya Jiwan. Wheel wear mechanism and tool life in fine grinding. Kanpur University.

3. Singh, C.P.P. Process simulation of ammonia plant. Indian Institute of Technology, Kanpur.

BIOLOGICAL SCIENCES

Anthropology

1. Sahu, Paresh Nath. Demogenetic study of the Mallias. Berhampur University.

Microbiology

1. Ambudkar, Suresh V. Biosynthesis of electron transfer components in micro-organisms. Madurai University.

Biochemistry

1. Deshmukh, Devendra Ramchandra. Studies on ornithine metabolism in brain. Maharaja Sayajirao University of Baroda.
2. Guruprasad, K.N. Biochemistry of some aspects of photomorphogenesis. Gujarat University.
3. Madiyalakan, R. Mycotoxins: Studies on secondary metabolite (s) of *Penicillium patulum*. University of Madras.
4. Sindhu, Ram Kumar. Studies on polyamine metabolism in germinating groundnut seeds. University of Baroda.
5. Sreekumar, P. Effect of dietary fats of varying unsaturation on the metabolism of lipids, glycosaminoglycans and glycoproteins. University of Kerala.
6. Thambi Dorai, D. Studies on glycoproteins. University of Madras.

Botany

1. Balakrishnan Nair, M.N. Structure and development of phloem in Pteridophytes. Sardar Patel University.
2. Chauhan, Lakhan Singh. Studies on the Rhizoctonia leaf blight of castor. Kanpur University.
3. Ghosh, Ajit Kumar. Effect of certain plant pigments as anticarcinogens on different malignant growths from cytological and cytochemical aspects. University of Calcutta.
4. Janaki, V.C. Study of variations in some *Anabaena* sp. University of Madras.
5. Khanolkar, Shubhada Madhukar. Cytogenetic studies in *Cerium coticum*. Nagpur University.
6. Sadagathullah, A. Habib Mohamed. Regulatory effects of ammonium ions on the photosynthetic carbon flow system. Madurai University.
7. Seetha Rani Reddi, Thondapu Veera Venkata. Cytogenetics of mutants induced by physical and chemical mutagens in three varieties of rice, *Oryza sativa* L. Andhra University.
8. Shrivastava, Ranjana. Studies on a RNA polymerase mutant of *Escherichia coli* K-12. Kanpur University.
9. Shrivastava, Vidya Kant. Cytotaxonomic classification of some polymorphic ornamentals. Kanpur University.
10. Veerabhadra Rao, Saripalli. Studies on the crossability relationships of some spinous *Solanums*. Andhra University.

Zoology

1. Deshmukh, Sarita Shrikrishna. Toxicological studies on some fishes. Nagpur University.
2. Gupta, Prem Chandra. Studies on helminthology: Trematode parasites of birds. Kanpur University.
3. Mohan, R. Samuel Lal. Studies on the fishes of the family Sciaenidae of India. Madurai University.
4. Pavan Kumar, T. Studies on locomotor and physiological rhythms in the slug, *Laevicaulis alte* (Ferussac, 1821). Sri Venkateswara University.
5. Ponniah, A. Geethanand. Ecophysiological studies on chosen thermoconformer, *Macropodus*. Madurai University.
6. Ramila, G. Studies on cellular interactions, immune responses and antigenic competition in the lizard, *Calotes versicolor*. Kamaraj University.
7. Sreeramulu, N. Studies on the nature and chemical composition of selected arthropod and molluscan endoskeletal structures. Sri Venkateswara University.
8. Swami, Chandrakanta. Studies on the anatomy and physiology of the digestive organs in some Heteroptera. University of Saugar.
9. Varadarajan, Sudha. Studies on reproduction in crustaceans. University of Madras.

Medical Sciences

1. Chatterjee, Pushpendu. Physical, neurointegrative and psychological development in survivors of severe protein calorie malnutrition: A study in early school age children (6-9 years) of an urban area, Chetla. University of Calcutta.

2. Chockalingam, K. Recidivists. A descriptive factor analytic study of certain sociological and criminogenic variables. University of Madras.

3. Jain, Narendra Kumar. Microbiological contamination in oral drugs (Tablet form). University of Saugar.

4. Somasundaram, K. Studies in experimental tuberculosis and metabolism of Tubercle bacilli. University of Kerala.

5. Vaidya, Vijay Anant. Study of nature, anatomical locations and causes of injuries in Kabaddi to evolve preventive measures. Nagpur University.

Agriculture

1. Baral, Tripti. Studies on the effects of antitranspirants on Indian crops and weeds. University of Calcutta.

2. Desai, Subodhchandra Bachubhai. Post harvest losses in fruits and chemical control of rotting. Sardar Patel University.

3. Nagpure, Nilkanth Sadashivrao. Effect of varying levels of soil fertility and methods of weed control on fertilizer use efficiency in dwarf wheat WH-147. Haryana Agricultural University.

4. Om Parkash, Schedule of insecticidal applications against insect pest complex of brinjal fruit with special reference to brinjal and shoot borer, *Leucinodes orbanlis* G. Haryana Agricultural University.

5. Pandeyo, Ram Sufal. Effect of growth regulators on efficiency and productivity of wheat. Kanpur University.

6. Sardar Singh. Studies on the effect of different levels of nitrogen and harvesting durations on growth yield and quality of forage sorghum varieties. Kanpur University.

7. Saxena, Jeetendra Kumar. Genetic divergence and combining ability studies in genus *Pisum*. Kanpur University.

8. Tandon, Dalip Kumar. Studies on the lime induced chlorosis of sugarcane. Kanpur University.

9. Verma, Uday Veer Singh. Studies on fertilization of dwarf wheat in potato-wheat intercropping in relation to seeding technique. Kanpur University.

Veterinary Science

1. Anand, Gulshan Rai. Genetic investigations on some performance traits and biochemical polymorphic traits in dairy cattle. Haryana Agricultural University.

2. Jalnapurkar, B.V. Foetal immune system and serum immunoglobulin levels with reference to neonatal mortality in buffalo. Konkan Krishi Vidyapeeth.

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- (2) For post at J : RESEARCH OFFICER should read as **TWO POSTS** instead as one.
- (3) For post at H : GENETICIST: Qualifications should read as **ESSENTIAL** : (i) Consistently good academic record with 1st or high 2nd Class (B+) Master's degree in Horticulture/Genetics and Plant Breeding with specialisation in Genetics or/and Plant Breeding preferably in Ornamental Plants following a good degree in Agriculture;
- (4) (ii) & (iii) will remain unchanged. For post at L: LECTURER IN ANIMAL NUTRITION : Qualifications should read as—**ESSENTIAL**: i) Consistently good academic record with 1st or high 2nd class (B+) Master's degree in Animal Nutrition or recognised equivalent qualification following a good degree in Veterinary and Animal Science/Agriculture; (ii) A Doctoral degree in relevant subject or published work of an equally high standard; (iii) will remain unchanged.
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Smt. Kamalini H. Bhansali
REGISTRAR

PANJAB UNIVERSITY CHANDIGARH

Advertisement No. 23/78

Applications are invited for the following posts so as to reach the Registrar, Panjab University, Chandigarh, along with postal order of Rs 10/- by 9-10-78. Fourteen days extra time is permissible to the persons who have to submit their applications from abroad.

1. Lecturer in Library Science, P.U. Chandigarh.....2.
(One Temporary) (Pay-scale : Rs 700-40-1100-50-1600).

QUALIFICATIONS

Essential

- (a) A Doctor's degree or research work of an equally high standard; and
- (b) Consistently good academic record with 1st or high Second Class i.e. 55% marks or more (B in the seventh point scale) Master's degree in Library Science or an equivalent degree of a foreign University. Having regard to the need for developing inter-disciplinary programmes, the degrees in (a) and (b) above may be in relevant subject. The consistently good academic record at Pre-Master's level would be interpreted as an average of 50% or above at the two examinations prior to Master's Examination.

Provided that if the Selection Committee is of the view that the

research work of a candidate as evident either from his thesis or from his published work is of a very high standard, it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable a person possessing a consistently good academic record, (weightage being given to M.Phil or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research Laboratory/Organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

2. Assistant Librarian.....1.
(Pay-scale : 400-40-800-50-950).

QUALIFICATIONS

Essential

M.A./M.Sc./M.Com II Class with B.Lib Science/Dip.Lib.Sc. II Class and five years experience in a well organised Library.

Desirable

Knowledge of Hindi or Punjabi and experience in documentation and publishing work.

15% posts in respect of Posts at Sr.No. 1 will be reserved for the members of the Scheduled Castes and 2% for the members of the Scheduled Tribes, but these will be filled up by others if no suitable Scheduled Castes/Scheduled Tribes applicant is available.

Persons already in service should route their applications through proper channel. Incomplete forms and those received after the due date will not be entertained. Serving employees, may however, send their applications on the prescribed proforma direct to the University. They may route another copy through their Departments. They will be allowed to present themselves for interview only on the production of a 'No Objection Certificate' from their employers. Canvassing in any form will disqualify a candidate.

Application forms can be obtained from the Cashier, Panjab University, Chandigarh personally on payment of Re. 1/- or by making a written request to the Finance & Development Officer, Panjab University, Chandigarh, accompanied with self-addressed stamped envelope of 23×10 cms. and a postal order for Re. 1/- drawn in favour of the Registrar, Panjab University, Chandigarh-160014.

HARYANA AGRICULTURAL UNIVERSITY

Advertisement No. 6/78

APPLICATIONS invited for following posts. Higher start outstanding qualifications, experience and achievements. Benefits of Contributory Provident Fund and leave etc. according to University Rules. Applications of the candidates already in service must reach through proper channel upto the fixed date. Applications on prescribed form (obtainable free by sending self-addressed unstamped envelope size 23×10 cms. to Assistant Registrar (R), HAU, Hissar) accompanied by prescribed fee of Rs 10/- in the form of Crossed Postal Order in the name of Assistant Registrar(R), HAU, Hissar payable at Hissar Post Office, should reach Registrar by 10-10-1978. The envelope containing application must be superscribed as "APPLICATION FORM FOR THE POST OF—".

1. Extension Specialist (Home Science): (Rs 1200-50-1300-60-1900): Essential: (i) Second class B.Sc. in Home Science. (ii) Second class M.Sc. in Home Science/Extension Education. (iii) Five years experience of extension/teaching/research in Home Science. Desirable: (i) Ph.D. in Home Science. (ii) Familiarity with experience and capacity in organising women's programmes in rural areas. (iii) Persons without Ph.D. will have to obtain Ph.D. within 5 years of the appointment unless extended in the interest of University work, otherwise their future increments will be stopped.

2. Research Scientist (Animal Nutrition): (Rs 1200-50-1300-60-1900): Essential: (i) Second class B.Sc. (Ani. Sc.)/B.V.Sc. & A.H./B.V.A.Sc./B.Sc. Dairy Husbandry/B.Sc. Agri. (ii) Second class M.Sc. in Animal Nutrition. (iii) Ph.D. in Animal Nutrition. (iv) Five years' experience in Animal Nutrition Research/Teaching/Extension. Desirable: Research experience in Forage quality evaluation.

3. Associate Professor (Animal Products Technology): (Rs 1200-50-1300-60-1900): (i) Second class B.V.Sc. & A. H./B.V. A. Sc./B.Sc. (Agri.)/B. Sc. (Ani. Sc.). (ii) Second class in M.V. Sc. M. Sc. (Ani.Sc.)/M.Sc. (Food Tech.) with specialization in Meat/Wool Technology. (iii) Ph.D. in Meat Technology/Wool Technology. (iv) Five years teaching/extension/research experience as evidenced by published work in journals of repute.

4. Scientist: (Rs 1200-50-1300-60-1900): Essential: (i) Second class B.Sc.(Agr.). (ii) Second class M.Sc. Soil Science/Agronomy. (iii) Ph.D. in Soil Science/Agronomy with specialization in Soil Fertility. (iv) Five years experience in teaching/research/extension in Soil Science/Agronomy with special reference to Soil Fertility and Fertilizer use. Desirable: Experience in field experimentation and designing of experiments.

5. Assistant Professor(Helminthology): (Rs 700-40-1100-50-1300-Assessment-50-1600): (i) Second class B.V.Sc. &

A.H. (ii) Second class M.V.Sc. in Helminthology. (iii) Three years experience of teaching and/or research in Helminthology or Ph.D. in Helminthology.

6. Assistant Professor, Animal Production Physiology: (Rs 700-40-1100-50-1300-Assessment-50-1600): (i) Second class B.V.Sc./B.Sc.(An.Sc.)/B.Sc. (Agr.) with A.H. Specialisation/B.Sc. (Dairying Husbandry). (ii) Second class Master's degree in physiology or equivalent with three years research experience in any branch of Production Physiology or Ph.D. with specialisation in any branch of production physiology.

7. Assistant Research Officer (Pica in Camels): (Rs 700-40-1100-50-1300-Assessment-50-1600): (i) Second class B.V.Sc. & A.H./B.V.A.Sc. (ii) Second class M.V.Sc. in Vety.Medicine/Pathology & Parasitology (iii) Three years teaching/research/extension experience in Vety. Medicine or Ph.D. in any of the above subjects.

Note

Qualifications relaxable in case of candidates with considerable experience in control of camel diseases.

8. Assistant Microbiologist: (Rs 700-40-1100-50-1300-Assessment-50-1600): (i) Second class B.Sc. in Microbiology or B.Sc. (Agri.) or B.V.Sc. (ii) Second class M.Sc. in General Microbiology. (iii) Ph.D. in Microbiology or three years experience of Research/Teaching/Extension Associate or Lecturer or equivalent in Microbiology. Desirable: Experience in Applied Microbiology or Microbial Physiology.

9. Assistant Hospital Surgeon: (Rs 700-40-1100-50-1300-Assessment-50-1600): (i) Second class B.V.Sc. & A.H. or equivalent. (ii) Second class M.V.Sc. in Surgery/Medicine/Gynaecology/Vety. Extension. (iii) Ph.D. in Surgery/Medicine/ Gynaecology/ Vety. Extension or three years experience in Surgery/Medicine / Gynaecology / Vety. Extension.

10. Assistant Professor, Botany: (Rs 700-40-1100-50-1300-Assessment-50-1600): (i) Second class B.Sc./B.Sc. (Agr.). (ii) Ph.D. in Plant Physiology or Second Class M.Sc. in Botany/Plant Physiology with three years experience of research/extension/teaching in Plant Physiology.

11. Assistant Plant Physiologist: (Rs 700-40-1100-50-1300-Assessment-50-1600): (i) Second class B.Sc. (Agr.) or B.Sc. (ii) Second class Master's degree in Plant Physiology. (iii) Three years experience of teaching/research in Plant Physiology preferably on nutrient requirements of field & fruit crops or Ph.D. in Plant Physiology with specialization in Plant Nutrition.

12. Assistant Professor (Wool Technology): (Rs 700-40-1100-50-1300-Assessment-50-1600): (i) Second class B.V.Sc. & A.H./B.V.A.Sc./B.Sc. (Agri.)/B.Sc.(Ani.Sc.). (ii) Second class M.V.Sc./M.Sc. (Food Tech.)/M.Sc. (Ani.Science) with three years experience as teaching/research/extension Associate or Lecturer or equivalent in the area of wool technology. Or Ph.D. in any

branch of Animal Products Technology preferably wool technology or meat technology.

13. Assistant Professor (Vety. Medicine): (Rs 700-40-1100-50-1300-Assessment-50-1600): (i) Second Class B.V.Sc. & A.H. (ii) Second class M.V.Sc. in Vety.Medicine. (iii) Ph.D. in Vety. Medicine or three years experience in teaching/research/extension in Vety.Medicine.

14. Assistant Rural Sociologist: (Rs 700-40-1100-50-1300-Assessment-50-1600): Essential: (i) Second class B.A./B.Sc. (Agri.). (ii) Second class M.A./M.Sc. in Sociology with specialization in Rural Sociology. (iii) Three years experience of teaching/research/extension in Sociology/rural sociology or Ph.D. in Sociology/Rural Sociology. Desirable: (i) Training in research methodology or statistical methods in social sciences. (ii) Rural background.

15. Assistant Professor of Chemical Pharmacology: (Rs 700-40-1100-50-1300-Assessment-50-1600): Essential: (i) Second class B.V.Sc./B.V.A.Sc./B. Pharma/B.Sc. (ii) Ph.D. in the field of Chemical Pharmacology/ Pharmaceutical Chemistry/Organic Chemistry/Medicinal Chemistry or Second class M.Sc. in any of the above fields with three years' experience of teaching/research in medicinal chemistry. Desirable: Experience in isolation, identification and characterization of active principles from natural products.

Note

- For posts at Sr.Nos. 1 to 4, 6, 8, 10, 11, 12 and 14, one or more of the Essential Qualifications relaxable for candidates with outstanding attainments/experience.
- For posts at Sr. Nos. 5, 7, 9, 13 and 15, qualifications are relaxable if persons with requisite experience/qualifications are not available.
- For posts at Sr. Nos. 1 to 4, special weightage will be given to extension experience possessed by the candidates.
- For posts at Sr. Nos. 5 to 15, the persons who do not possess Ph.D. at the time of their selection, if selected, will have to obtain Ph.D. degree within a period of five years failing which their future increments may be stopped.

REGISTRAR

UNIVERSITY OF BOMBAY

Centre of Post-graduate Instruction
and Research.

Panaji, Goa

Applications are invited for the following temporary posts in the Centre of Post-graduate Instruction and Research, Panaji, Goa:

- Professor of History
- Professor of English
- Reader in Marathi
- Reader in French
- Reader in Portuguese
- Reader in Chemistry
- Lecturer in Philosophy

The grades of the posts are—Professor: Rs. 1500-60-1800-100-2000-125/2-2500; Reader: Rs. 1200-50-1300-60-1900 and Lecturer: Rs. 700-40-1100-50-1600.

All the posts carry the benefits of University Provident Fund, Dearness Allowance and House Rent Allowance at the rates sanctioned by the Executive Council from time to time. A higher starting salary may be given to a person possessing high qualifications. Other things being equal preference will be given to candidates from backward classes. The post of Lecturer is reserved for candidates belonging to scheduled castes and scheduled tribes and will be filled up by appointment of such candidate only as shall satisfy the requirements regarding qualifications, experience etc laid down for the post, provided, however, that if no candidate is available from the scheduled castes or scheduled tribes the post will be filled up by appointment of a duly qualified candidate from among the other candidates.

The general requirements for the posts are as follows:

Professor

An eminent scholar with published work of high quality actively engaged in research. Ten years' experience of teaching and/or research. Experience of guiding research at doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

Reader

Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

About five years' experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding research work.

Lecturer

(a) A Doctor's degree or research work of an equally high standard; and

(b) Consistently good academic record with 1st or high 2nd class (B in the seven point scale). Master's degree in a relevant subject or an equivalent degree of a foreign University.

Having regard to the need for developing inter-disciplinary programmes, the degrees in (a) and (b) above may be in relevant subjects.

The Executive Council may relax any of the qualifications prescribed in (b) above provided that the selection committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard.

If a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, the Executive Council may appoint a person possessing a consistently

good academic record (weightage being given to M.Phil. or equivalent degree or research work of quality) provided he has done research work for at least two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which, he will not be able to earn future increments until he fulfils these requirements.

In addition, the special requirements for the following posts are as indicated against them:

Professor of History: (i) Knowledge of Portuguese, Marathi including the Modi script, (ii) Research publications in the History of Goa and Portuguese relations with other states and the powers in the past or (ii) Research publications in the colonial history of the Portuguese in Asia, Africa and Latin America.

Professor of English: Specialisation in the study of (i) English language, (ii) Study of American Literature Or (iii) Study of Commonwealth Literature with special reference to the Goan contribution to Indian writing in English.

Reader in Marathi: Specialisation in modern literary criticism, familiarity with modern trends in English literature and criticism and with the contribution of Goan writers to Marathi literature. Working knowledge of Konkani.

Reader in Chemistry: Specialisation in Physical Chemistry in Photochemistry Or Polymers Or Kinetics Or Spectroscopy.

Lecturer in Philosophy: Specialisation in Symbolic logic.

Two copies of the application in the prescribed form, which can be had from the Registrar (Room No. 121, Registrar's Office) should be submitted so as to reach the Registrar, University of Bombay, Bombay-400032 on or before 30th September 1978.

Candidates called for interview will have to present themselves at their own expense.

Canvassing direct or indirect will be a disqualification.

P.S. Sawant
Ag. REGISTRAR

INDIAN INSTITUTE OF TECHNOLOGY, KANPUR KANPUR-208016

Advertisement No. 22/78

Applications are invited for the posts of Assistant Professor/Lecturer in the Computer Science Programme and in the Industrial and Management Engineering Programme of the Institute in the following pay scales:

Assistant : Rs. 1200-50-1300-60-1900

Professor

Lecturer : Rs. 700-40-1100-50-1600

The Programmes are seeking individuals with ability and aptitude for teaching, research and development in

any of the areas of specialisation listed under each. The number of posts available in each of the Programmes are also indicated below:

(1) COMPUTER SCIENCE PROGRAMME

- (a) Computer architecture
- (b) Software engineering
- (c) Information systems and data bases
- (d) Data structures and non-numeric computing
- (e) Numerical methods and computer aided design
- (f) Simulation and optimization

Number of posts: Three (likely to be five)

The Computer Science Programme has an undergraduate programme which was started in 1978 and an active postgraduate programme leading to M. Tech. and Ph.D. degrees. A number of sponsored projects in software development and real time systems are in progress.

(2) INDUSTRIAL & MANAGEMENT ENGINEERING PROGRAMME

- (a) Management Information Systems
- (b) Work Design and Human Factors Engineering
- (c) Production Management
- (d) Marketing and financial management of engineering projects
- (e) Optimization of engineering and production systems

Number of Posts : Three

The Industrial and Management Engineering is an Interdisciplinary Programme which was started in July, 1974. It offers a postgraduate programme leading to M. Tech. and Ph.D. degrees.

QUALIFICATIONS

Assistant Professor

Doctorate degree with good academic record and at least three years of professional experience outside the work for degrees.

OR

M. Tech. with good academic record and at least seven years of industrial experience outside the work for degrees.

The candidates must have potential for independence in teaching and independent research work as demonstrated by adequate number of publications of good quality in journals of repute outside the candidates own thesis or equivalent development work done.

Lecturer

Doctorate degree with a good academic record and adequate research development experience resulting in research papers of good quality.

OR

M. Tech. with good academic record and at least three years of teaching research/industrial experience with good record outside the work done for degrees.

For the positions in Computer Science Programme, the candidates should have strong interest in developing undergraduate and postgraduate programmes including laboratory and curriculum development.

For the positions in the Industrial and Management Engineering Pro-

gramme, candidates with Engineering/Technology background only will be considered.

Appointments may be made either full-time in a Programme or jointly between Programme and any other appropriate department of the Institute. The Institute has ten departments viz. Aeronautical, Chemical, Civil, Electrical, Mechanical and Metallurgical Engineering and Chemistry, Humanities and Social Sciences, Mathematics and Physics.

The Indian Institute of Technology, Kanpur has well equipped laboratories and central facilities. The Institute has a large Computer Centre with IBM 7044, IBM 1401, IBM 1800, PDP-I Systems with interactive graphic terminals and TDC-316 and a group of experienced programmers. The Institute has an order a DEC-1090 system with 250 K words of memory, 600M bytes of disk, and 28 terminals. The system is expected to be installed around December, 1978. The Institute has a well stocked Library with more than 150,000 volumes and 1,300 periodicals. There is a very good collection of journals and books on Computer Science and Industrial and Management Engineering. The central facilities include 2 MV Van de Graaff accelerator, 4096 multi-channel helium plants, NMR, EPR, Mass Spectrometer, X-Ray plant, UV and IR Spectrometers, glass-blowing shop, crystal growth facility, central instrumentation laboratory, precision machine shop, electron microscope besides a large workshop for fabrication of specialised research apparatus.

There is an Advanced Centre for Electronic Systems at the Institute. The Centre has been sponsored by the Ministry of Defence to carry out training and unclassified research and development work in the areas of communication and Radar. Besides, an Advanced Centre for Materials Science has been established recently at the Institute by the Government of India to undertake research in the frontiers of development on materials of national importance.

Posts are permanent and carry retirement benefits in the shape of CPF Scheme or CPF-cum-Gratuity Scheme or GPF - cum - Pension-cum-Gratuity Scheme as may be opted according to rules. The age of retirement is 60 years. During the first year the appointment will be on probation. Besides, pay, posts carry allowances according to the Institute rules, which at present correspond to those admissible to the Central Government employees stationed at Kanpur. Higher initial pay is admissible to exceptionally qualified and deserving candidates. Candidates called for interview will be paid second class railway fare from the place of duty to Kanpur and back by the shortest route.

In the category of Lecturer, one post will be reserved for SC/ST candidates in each of the Programmes. In the event of non-availability of SC/ST candidates, the reserved post would be treated as dereserved.

Applications from within India must

be made on prescribed form obtainable free of charge from the Registrar of the Institute by sending a self-addressed unstamped envelope of 25 x 10 cm size. Applications should be accompanied by a postal order for Rs 7.50 (Rs. 1.87 for Scheduled Caste/Scheduled Tribe candidates).

Applicants who are employed in a Government/Semi-Government organization or Institute, should send their applications through proper channel, else they will be required to produce a 'No Objection' certificate from their employers at the time of interview.

Applicants from abroad may apply on plain paper enclosing a complete bio-data and names of three referees from whom reference letters may be obtained.

Applications should reach the Registrar, Indian Institute of Technology, IIT Post Office, Kanpur-208016 (India) on or before Oct 12, 1978.

GURU NANAK DEV UNIVERSITY, AMRITSAR Advertisement No. 18/78

Applications are invited for the following posts on prescribed form obtainable (free of cost) from office of the Registrar, Guru Nanak Dev University, Amritsar by making written request accompanied by self-addressed stamped envelope of 23 x 10 cms. so as to reach this office by 22.9.1978 from persons residing in India and by 30.9.1978 from persons residing in foreign countries alongwith crossed Indian Postal Order (s) for Rs. 7.50 for posts at Sr. No. 1 to 5 and Rs. 5/- for posts at Sr. No. 6 to 8 drawn in favour of Registrar, Guru Nanak Dev University, Amritsar. Application fee is not refundable.

Note: Persons already in employment must send their applications through their employers.

Grade: (plus allowances as admissible under University rules)

1. Readers (Rs. 1200-50-1300-60-1900) in Economics-2 and for School of Planning-1.
2. Lecturers (Rs. 700-40-1100-50-1600) in Political Science-1; Psychology-2; Law-1, Biology-3; Guru Nanak Studies-1.
3. Lecturers (temporary) (Job-Oriented Courses) in Chemistry Department (Rs. 700-40-1100-50-1600) in (i) Instrumentation (ii) Dyes and Dyeing Technology (iii) Paints and Varnishes (iv) Heat Treatment (v) Electroplating.
4. Curator (Museum) in Biology Department (Rs. 400-40-800/50-950).
5. Public Relations Officer-1 (Rs. 400-40-800/50-950) (Likely to be revised to the grade of Rs. 700-1300).
6. Research Assistants in Biology Department-2 (Rs. 550-20-650-25-750).
7. Research Assistant in Guru Nanak Studies Department-1 (Rs. 550-20-650-25-750).
8. Electrician for Guru Nanak Dev University Evening College, Jullundur-1 (Rs. 110-3-140).

QUALIFICATIONS

For Posts at Sr. No.1: Readers in Economics: Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

About five years' experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position. This condition may be relaxed in the case of candidates with outstanding research work.

SPECIALIZATIONS

For 1st post: Econometrics and Economic Statistics. **For 2nd post:** Monetary theory and policy and Banking/Industrial Economics. A good grounding in Mathematics and quantitative methods will be desirable. **Reader for School of Planning:** (i) B. Architecture or B.E. (Civil) or any other equivalent qualification of a recognised University or an Institution. (ii) A Post-graduate Degree or Diploma in Town & Country Planning or in Landscape Architecture; (iii) 5 years experience in Town Planning Practice or teaching. (Relaxable in suitable cases) **GENERAL:** (i) Higher start in the grade may be given depending on qualifications and experience (ii) Candidates already in Government or Semi-Government employment should apply through their employers to enable consideration of their selection/appointment on deputation basis.

Posts at Sr. No. 2 & 3 (Lecturers)

(A) A Doctor's degree or research work of an equally high standard; and (B) consistently good academic record with 1st or high 2nd class (B in the seven point scale) Master's degree in a relevant subject or an equivalent degree of a foreign University.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (B) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a consistently good academic record (weightage being given to M. Phil or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research Laboratory/ Organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard with five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

EXPLANATION

Candidates for being eligible for recruitment to the posts of Lecturers must have a 1st or High 2nd Class (B in seven point scale) at the Master's level and for determining consistently good academic record, average of

50-55% may be expected at the two examinations prior to the Master's degree examination.

NOTE

Knowledge of panjabi and a foreign language other than English will be an additional qualification for the posts of Readers and Lecturers. Other essential and desirable qualifications for the post of Lecturer in Guru Nanak Studies Department. Essential: M.A. in Linguistics/Anthropological Linguistics. Desirable: (i) Adequate knowledge of Sikh Scripture; (ii) Diploma in Lexicography/Etymology for those who do not possess Master's Degree in Linguistics.

SPECIALIZATIONS

Lecturers in Psychology: (i) Social Psychology; (ii) Psychology of cognition; (iii) Child Psychology; (iv) Personality.

Lecturer in Law: Property Law and International Law.

Lecturers in Biology: Specializations preferred: Molecular Biology, Cell Physiology, Microbial Genetics, Immunology, Ecology, Vertebrate Biology, Theoretical Biology or any other area of Modern Biology.

Lecturer in Instrumentation: M.Sc. Technology in Electronics/Instrumentation.

Lecturer in Dyes and Dyeing Technology: M.Sc. Technology (Textile Chemistry).

Lecturer in Paints and Varnishes: M.Sc. Technology in Paints and Varnishes.

Lecturers in Heat Treatment and Electroplating: M.Sc. Engg. (Mechanical).

Additional Qualifications for Lecturers for Job Oriented Courses: Teaching/Research/Factory Experience. Qualifications

For post at Sr. No. 4: M.Sc. Zoology with good academic record and two years research experience in Systematics/Ecology.

NOTE

Those who applied for this post in May, 1978 need not apply again.

For post at Sr. No. 5: (i) Master's degree with at least Second Class Diploma in Journalism. (ii) At least 5 years' experience as Journalist in a Newspaper or News Agency or a Publicity Organisation. Desirable: Practical knowledge of advertisement, preparing annual publicity budgets and selection of suitable media Book Publications, copy writing and experience of advertising agency/Public Relations. Conception of Visual Aids, Exhibition etc.

NOTE

Higher starting pay can be given to a deserving candidate. Condition at (ii) above is relaxable.

For post at Sr. No. 6: Good academic record with First or High Second Class (b+) Master's degree. Research experience/aptitude for research in any Modern area of Biology preferably Molecular/Cell Biology, Enzymology, Immunology, Microbial/Fungal Ecology.

NOTE

Those who already applied for the post of Research Assistant in Biology need not apply again.

For post at Sr. No. 7: Essential: (i) At least 2nd Class M.A./M.Sc. in History/Sociology/Geography/Social Anthropology; (ii) Knowledge of Punjabi in Gurmukhi Script. Preferable: (i) Experience of Field work; (ii) Knowledge of Photography.

For post at Sr. No. 8: (i) Matriculation with 2 years certificate course of Electrician from ITI or any other recognised Institution; (ii) Should possess wiring/electrician license from Chief Electrical Inspector, Punjab; (iii) Experience in operation of Sub-Station, Internal Electrical Wiring and overhead mains shall be preferred.

Mohinder Singh Randhawa
REGISTRAR

PANJAB UNIVERSITY CHANDIGARH

Advertisement No. 24/78

Applications are invited for the following posts in the Department of Chemical Engineering and Technology, P.U. so as to reach the Registrar, Panjab University, Chandigarh along with postal orders for Rs. 10 by 9.10.1978. Fourteen days extra time is permissible to the persons who have to submit their applications from abroad.

1. Professors—2

(Grade: Rs. 1500-60-1800-100-2000-125/2-2500) (Reaction Engineering and Process Dynamics-1, Transfer Processes-1)

QUALIFICATIONS

Essential

First class Bachelor's degree followed by Master's degree/Doctorate degree in appropriate field with minimum 7 to 10 years distinguished experience in teaching/research in an Engineering institution or a University at Under-graduate and post-graduate levels.

Specialised knowledge in one or more specified fields with experience in guiding research.

Desirable

Professional/Scientific work of outstanding merit.

2. Readers—4 (Grade: Rs. 1200-50-1300-60-1900)

(Petroleum Process and Polymer-1, Petrochemical Engg. and Modelling, Simulation and System Engineering-1, Bio-chemical Engineering and Food Fermentation-1).

QUALIFICATIONS

Essential

First class Bachelor's degree followed by Master's degree/Doctorate Degree in appropriate field with minimum of five years experience in teaching/research in an Engineering Institution or University.

Desirable

Specialised knowledge in one or more specified field/subject with outstanding teaching, research experience and Doctorate degree or published work of equal standard.

3. Lecturer—1 (Grade: Rs. 700-40-1100-50-1600)

(Environmental Engineering-1)

QUALIFICATIONS

Essential

First Class Bachelor's degree follow-

ed by Master's degree in appropriate field.

Desirable

1. Two years' industrial/research/teaching experience in an Engineering Institution or a University.
2. Doctorate degree or published work of equal standard.

Candidates for the posts of Readers who do not possess a doctoral degree are required to submit 10 typed/cyclostyled copies of brief resume of their research/published work. 15% posts of Lecturers will be reserved for the members of the Scheduled Castes and 2% for the members of the Scheduled Tribes, but these will be filled up by others if no suitable Scheduled Castes/Scheduled Tribes applicant is available. Persons already in service should route their applications through proper channel. Incomplete forms and those received after the due date will not be entertained. Serving employees, may however, send their applications on the prescribed proforma direct to the University. They may route another copy through their Departments. They may route another copy though their will be allowed to present themselves for interview only on the production of a "No Objection Certificate" from their employers. Canvassing in any form will disqualify a candidate.

Application forms can be obtained from the Cashier, Panjab University, personally on payment of Re 1 or by making a written request to the Finance and Development Officer, Panjab University, Chandigarh, accompanied with self addressed stamped envelope of 23 x 10 cms and a postal order for Re 1 drawn in favour of the Registrar, Panjab University, Chandigarh.

RABINDRA BHARATI UNIVERSITY

6/4, Dwarkanath Tagore Lane,
Jorasanko, Calcutta-700007

JUNIOR RESEARCH FELLOWSHIPS

Applications will be received by the undersigned upto 25-9-78 for Eight U.G.C. Junior Research Fellowships in English, Bengali, History, Economics, Pol. Science, Painting (one post each) and in Drama (two posts) of Rs. 400 p.m. with contingent grant of Rs. 1500 p.a. Applications for the award of above Fellowships are to be submitted in the prescribed proforma available in the University Office at Jorasanko.

The applicants should be preferably below 30 years and must have first or high second class M.A. degree of a recognised University with a minimum of 55% of marks or at least B+ in the grade system.

Ten per cent of the fellowships are reserved for candidates belonging to SC/ST candidates provided they fulfil the minimum qualifications. In case qualified candidates are not available, reserved fellowship may be treated as unreserved.

Incomplete applications and applications received after the last date may not be treated as valid.

REGISTRAR

UNIVERSITY OF BOMBAY

Applications are invited for the following posts in the University:

Post/s	Department
1. Professor	Marathi
2. Reader	—do—
3. Professor	Kannada
4. Professor	Economics
5. Professor	Civics & Politics
6. Professor	Law
7. Professor of German	Foreign Languages
8. Reader in French	—do—
9. Reader	History
10. Professor of Dyestuff Technology	Chemical Technology
11. Reader	Statistics
12. Two Lecturers	—do—

The grades of the posts are: Professor—Rs 1500-60-1800-100-2000-125/2-2500, Reader—Rs 1200-50-1300-60-1900 and Lecturer—Rs 700-40-1100-50-1600.

All posts carry the benefits of Dearness Allowance, House Rent Allowance and Compensatory Local Allowance at the rates sanctioned by the Executive Council from time to time. All the posts carry the benefits of University Provident Fund. A higher starting salary may be given to a person possessing high qualifications. The appointments to the posts will be on probation for two years, in the first instance, but the probationary period may be waived by the Executive Council in special cases. Other things being equal preference will be given to candidates from backward classes. The posts of Lecturer are reserved for candidates belonging to scheduled castes and scheduled tribes and will be filled up by appointment of such persons only as shall satisfy the requirements regarding qualifications, experience etc laid down for the posts, provided, however, that if no candidate is available from the scheduled castes and scheduled tribes, the posts will be filled up by appointment of duly qualified persons from among the other applicants.

The general requirements for the posts, except for the post at serial No. 10, viz, Professor of Dyestuff Technology, are as under:

Professor

An eminent scholar with published work of high quality actively engaged in research. Ten years' experience of teaching and/or research. Experience of guiding research at doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

Reader

Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

About five years' experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding research work.

Lecturer

(a) A Doctor's degree or research work of an equally high standard; and

(b) Consistently good academic record with 1st or high 2nd class (B in the seven point scale) Master's degree in a relevant subject or an equivalent degree of a foreign University.

Having regard to the need for developing inter-disciplinary programmes, the degrees in (a) and (b) above may be in relevant subjects.

The Executive Council may relax any of the qualifications prescribed in (b) above provided that the selection committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard.

If a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable the Executive Council may appoint a person possessing a consistently good academic record (weightage being given to M.Phil. or equivalent degree or research work of quality) provided he has done research work for at least two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which, he will not be able to earn future increments until he fulfils these requirements.

The special requirements for the posts at serial Nos 1,2,4,5 and 6 are as under:

Essential

A candidate must have proficiency in the fields of :

- History of Marathi Literature (Old and Modern);
- Theory of Literature and Literary Criticism, both Indian and Western, (Modern in particular);
- Applied Criticism and Development of Critical Thought in Marathi;
- Science of Research and Research Methodology.

Desirable

- General knowledge of Linguistic study of Marathi and Problems of Marathi grammar;
- Familiarity with the problems connected with the teaching of Marathi as a second language and preparation of study—material for the same;
- Capacity to plan, develop and generally to provide leadership for teaching and research activities and programmes of the Department.

2. Reader (Marathi)

Essential

A candidate must have proficiency in the fields of :

- Linguistic study of Marathi Language;
- Problems of Marathi Grammar in their theoretical and historical aspects;

- Familiarity with the problems connected with the teaching of Marathi as a second Language and preparation of study—material for the same.

Desirable

- General knowledge of Modern Theory of literature and Methods of Literary Criticism; and
- Deep study of some major author or history of some period of literature in Marathi.

4. Professor (Economics): Preference will be given to a candidate with proficiency in General Economics (with specialization in Economic Theory and/or Public Finance).

5. Professor (Civics & Politics): Specialisation in (a) International Relations and Foreign Policy & Diplomacy or (b) Political Theory and Political Thought.

6. Professor (Law): Specialization in International Law and Constitutional Law. Professional experience can be considered as equivalent to teaching or research experience.

The requirements for the post at serial No. 10, viz. Professor of Dyestuff Technology, are as under:

- (i) A consistently good academic record with a doctorate degree in Dyestuff Technology or Dyestuff Chemistry or Organic Chemistry with subsequent specialisation in Dyestuff Technology;
 - (ii) Research work other than that for Ph.D. degree or published work of recognised merit;
 - (iii) At least five years' teaching or professional experience in the relevant subject;
 - (iv) Experience of having successfully guided students for the Ph.D. degree in the subject concerned.
- OR
- (i) A consistently good academic record with first or high second class Master's degree in Dyestuff Technology or Dyestuff Chemistry or Organic Chemistry with subsequent specialisation in Dyestuff Technology;
 - (ii) Research work other than that for the Master's degree or published work of recognised merit;
 - (iii) At least eight years' teaching or professional experience in the relevant subject;
 - (iv) Experience of having successfully guided students for the Ph.D. degree in the subject concerned.

Two copies of the application (separate for each post) in the prescribed form, which can be had from the Registrar (Room No. 121, Registrar's Office) should be submitted so as to reach the Registrar, University of Bombay, Bombay-400032 on or before 30th September, 1978.

Candidates called for interview will have to present themselves at their own expense.

Canvassing direct or indirect will be a disqualification.

P. S. Sawant
Ag. REGISTRAR

10/11/78



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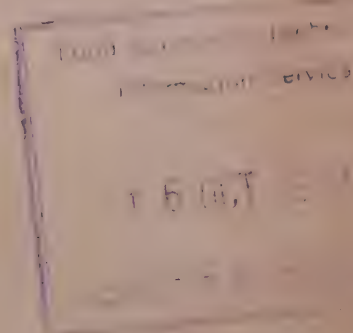
University News

A CHRONICLE OF HIGHER EDUCATION & RESEARCH OCTOBER 1, 1978 80 PAISE

- National Merit Examination

- Educating the Teacher

- Plans for Universal Elementary Education



Dr. P. C. Chunder, Union Education Minister, inaugurating the UNESCO-sponsored meeting of regional panel of experts for research and training in literacy, in New Delhi.

GURU NANAK DEV UNIVERSITY, AMRITSAR

Advertisement No. 19/78

Applications are invited for the following posts on prescribed form obtainable (free of cost) from office of the Registrar, Guru Nanak Dev University, Amritsar by making written request accompanied by self-addressed stamped envelope of 23×10 cms. so as to reach this office by 7-10-1978 alongwith crossed Indian Postal Order(s) for Rs 7.50 for post at Sr. No. 1 and Rs 5/- for posts at Sr. No. 2 & 3 drawn in favour of Registrar, Guru Nanak Dev University, Amritsar. Application fee is not refundable.

NOTE: Persons already in employment must send their applications through their employers.

Grade (plus allowances as admissible under University rules)

1. Lecturer in Punjabi : Temporary (Rs 700-40-1100-50-1600)
2. Junior Research Fellow (U.G.C.) in Economics (Rs 400/- p.m. fixed)
3. Photomicrographer for Biology Department (Rs 145-7-180-12-300)

QUALIFICATIONS: For post at Sr. No. 1: (A) A Doctor's degree or research work of an equally high standard; and (B) consistently good academic record with Ist or High 2nd Class (B in the seven point scale) Master's degree in a relevant subject or an equivalent degree of a foreign University.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (B) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a consistently good academic record (weightage being given to M. Phil or equivalent degree of research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research Laboratory/Organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

EXPLANATION: Candidates for being eligible for recruitment to the posts of Lecturers must have a Ist or High 2nd Class (B in seven point scale) at the Master's level and for determining consistently good academic record average of 50-55% may be expected at the two examinations prior to the Master's degree examination.

NOTE: Knowledge of foreign language other than English will be an additional qualification.

For post at Sr. No. 2: (i) 1st or High Second Class Master's degree in the subject concerned with good academic record. (ii) Aptitude for research.

For post at Sr. No. 3: Higher Secondary with certificate and/or experience in Photomicrography.

**Mohinder Singh Randhawa
REGISTRAR**

MARATHWADA UNIVERSITY

Advertisement No. Estt./Dept./46

Applications are invited for the following posts in the University Departments so as to reach the under-signed on or before **October 25, 1978**.

Readers (Pay scale Rs 1200-50-1300-60-1900) in History*, Economics, Commerce*, Botany*, Zoology*, one each, and Reader in Commerce—Two.

Lecturers (Pay scale Rs 700-40-1100-50-1600) in Chinese, French, Russian, German, Economics*, Political Science*, Sociology*, Commerce, Bio-Chemistry*, Botany* and Mathematics*, one each, and Lecturer in German—Two.

*(Posts are temporary but likely to be continued).

The scales of pay carry with them the benefit of Dearness Allowance in accordance with the rules of the University. In the case of Lecturers, other things being equal, preference will be given to candidates belonging to Scheduled Castes and Scheduled Tribes.

General Qualifications

(i) Readers

Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

About five years' experience of teaching and/or research, provided that at least three of these years were as Lecturer or in an equivalent position. This condition may be relaxed in the case of candidates with outstanding research work.

(ii) Lecturers

(a) A Doctor's Degree or research work of an equally high standard; and

(b) Consistently good academic record with first or high second class (B in the seven point scale) Master's Degree in a relevant subject or an equivalent degree of a foreign University.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a consistently good academic record (weightage being given to M.Phil. or equivalent degree or research work of quality) may be appointed, provided that he has done research work for at least two years or has practical experience in a research Laboratory/Organisation on the condition that he will have to obtain a Doctor's Degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements, and his services will be liable to be replaced by recruiting a person possessing the prescribed qualifications.

Lecturer in Russian, German and French

At least a Second Class Master's Degree in the concerned language from an Indian University or an equivalent degree from Foreign University.

For the post of Lecturer in Russian, a candidate having the knowledge of Soviet Economics Or History Or Political systems will be considered as an additional qualifications.

Lecturer in Chinese

Master's Degree in Second Class in Chinese Language Or proficiency in Chinese Language equivalent to M.A. in Chinese with M.A. in any other subject at least in Second Class and Diploma in Chinese.

Candidates applying for the post of Reader should ordinarily be below the age of 45 years and those applying for the post of Lecturer should ordinarily be below the age of 35 years. The age limit can be relaxed in the case of deserving candidates.

Eight copies of applications together with eight copies of each of the testimonials, if any, separately for each post giving particulars in the prescribed form (which will be supplied on receipt of an Indian Postal Order of Rs 3/- towards the cost of the form) should be sent to the Registrar so as to reach him not later than **October 25, 1978**. The prescribed application forms will be supplied to the candidates on request accompanied by a self addressed envelope (23×10 cm) bearing Postal stamps worth Re 1/- for the postage separately for each post.

Candidates who are employed at present must submit their applications through their employers.

Canvassing, direct or indirect, will be disqualification.

**V.K. Dhamankar
REGISTRAR**

**University Campus,
AURANGABAD**

UNIVERSITY NEWS

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Hony. Editor : ANJNI KUMAR

Universities

N.V.R.L.N. Rao*

Universities came into existence in twelfth century in Europe as a spontaneous combination of scholars and teachers into a body not only to give themselves certain status but also to enable them to protect themselves against the hostility of the people of whatever town they were in. The seven institutions—at Bologna and Raggio, and the medical school at Salerno in Italy, at Paris and Montpellier in France, Oxford in England and Maing in Germany—may be deemed as earliest universities. The University of Paris served as a model for Oxford and Cambridge. By the end of 14th century their number is about 40. At the end of nineteenth century there were more than six hundred. Today there are more than thousand. Men from universities left entangled in subtleties of discussion that ceased to interest thinkers and wise men aware of other aspects of learning. They thought nothing better can come from outside universities specially in literature. Their behaviour towards Shakespeare invited certain comments which were no tribute to the men in universities.

London University was established in 1825 purely as an examining body to cater for administrative staff in British colonies. However British thought it economical and desirable to establish universities in India for the purpose. Universities of Bombay, Calcutta and Madras came into existence on the pattern of London university in 1857 as examining bodies rather than on the pattern of Oxford and Cambridge where in personality development is an important factor. Alumni of Oxford and Cambridge never cared for examinations and they were neither judged on the basis of their examination results. It clearly shows that universities in India made a beginning with the sole object of producing servants. Unfortunately even after independence universities have not changed their roles and new universities also started copying older ones. In fact London University's set up has undergone considerable change but its descendents did not change for better. After independence many Indians went to several countries and returned with divergent views. Their experiments in educational field resulted in confusion.

Government of India and University Grants Commission, both have only advisory capacity under our constitution, appointed several committees, conducted seminars, debates and brought out write-ups on education. Some relevant findings are given below.

Radhakrishnan Commission (1948) declared,

*Professor of Civil Engineering, Osmania University,

“Examination is the pervasive evil of our educational system”.

Kothari Commission (1964-66) observed, “The crippling effect of external examinations on the quality of work in higher education is so great that examination reform has become crucial to all progress and has to go hand in hand with improvements in teaching. One line of attack would be to abolish set syllabuses and the external examinations based on them, and to replace them by a system of internal and continuous evaluation by teachers themselves.

UGC in 1973 suggested a plan of action for examination reform. Relevant suggestions are:

1. Those who teach should also examine. In this sense examination must become “Internal” and integral part of the teaching process. The object is to improve teaching according to needs of the students and to point out deficiencies of the students in order to correct and improve.
2. No numerical evaluation is desirable. It should be in terms like excellent, very good, good, fair and poor.
3. The evaluation in educational institutions should not be used for any other purposes except for which it is intended i.e. to help and improve teaching and learning of teacher and taught. For employment, employer should find his own means and methods of evaluation according to his needs. Admission to new courses should be on the basis of entrance test conducted by the concerned institutions.

UGC points out that impediments to reform in examination are due to vested interests who earn considerable amount of money through these examinations and decision for change lies in their hands. They take shelter in the name of standards, quality of students and above all so called Indian atmosphere. They expound the drawbacks of internal assessment, to make it seem evil as big as the present examination system without realising that examinations of the present type undermine basic educational objectives. The most common relatively weighty reason given for avoiding or postponing examination reform is that if any university would give up external examinations, its degree would be devalued.

In fact the word internal assessment has become catch word and widely misused and misinterpreted.

While introducing Hyderabad University Bill in Lok Sabha in 1974 the then Union Education Minister said that the system of examinations in educational pattern of India had “virtually collapsed and there is no use in our trying to resurrect it, even if we so desire. The tensions it creates on the nerves of the students is good enough justification for bringing about changes in the examination system.” In fact it creates nervous tension in the teachers and administration also. Examinations of the present type are no inferior to gambling and do not indicate real

merit of candidate. Examinations have come to dominate the educational process in such a manner that passing them is more important than acquiring knowledge. Numerical evaluation has no rationality and quite often arbitrary. Evaluation in educational institutions has resulted in punitive action rather than correction and improvement in the present form, because of its carrying over effect in subsequent career. Pass-fail system has failed all over the world. One can say presently that in India we do not have a system of education but a system of examination.

It is indeed pleasing to hear about “policy frame” prepared by UGC (January 78) after discussion with Prime Minister which expects the government to delink most of the jobs from degrees. It also proposes to decentralise academic authority now reposed in affiliating universities and further proposes a move away from the present system of external examinations. There are over 120 universities and 4500 affiliated colleges in the country. It is to be seen how effectively UGC will pursue the implementation of their proposals. So far academic community actively advocated for acceptance of UGC’s financial recommendations while resisting academic suggestions for obvious reasons with personnel too deeply rooted in the traditional approach.

Technical education essentially is commercial and professional. In recent past it has assumed academic outlook. Higher technological education should not only aim at development of skills and trades but also should aim at nursing reasoning faculties and enlarging the horizon of understanding and imagination of the universe. Twentieth century can be truly called technological age. Technological education has assumed greater importance obviously. Most of the engineering colleges and technical institutes function within the framework of universities.

Malady of examination did not spare technological education. Technical education is hardly century and a half old. Its impact on industry and society is enormous. Unless the burden of examinations in the present form is taken out, the future of technical education is bleak. Large scale disappointments from all corners are inevitable.

Dr. George Jacob and Dr. Kothari both former chairmen of UGC hoped that the major universities would give a lead in the matter. This will mean a great service in the cause of higher education.

There may be many reasons for crises in places of higher learning. But in India one of the most important reasons is examinations and undue importance given to them.

Nursing fathers of the higher learning are governments. Therefore political influence and governmental interference either directly or indirectly is seen in the functioning of universities. Youth is the most effective force who are unable to concentrate on their studies for obvious reasons. Hope of mankind lies in the growth and development of young men. Let us pray for the betterment of all, through proper education of youth in healthy universities. □

Case for National Merit Examination

A. R. Kidwai*

Since Independence there has been a phenomenal expansion of educational opportunities in India at all levels. This was aided by several factors. There was the urge among the younger generation to receive higher education as a means of fulfilment and to enable them to play a meaningful role in the development and administration of the country. This was particularly noticed among the economically and socially backward classes. All these inevitably led to gradual expansion and democratisation of education. The doors of institutions of higher learning were thrown open to all. This accounts for the fact that a substantial percentage of students in our institutions of higher learning are first generation learners—a healthy development which has strengthened the roots of democracy in India.

There were other contributory factors in harmony with a similar awakening and developments in other countries. New forces were emerging from new convictions about science, nationalism, economic development, human dignity and these in a cumulative form led to a tremendous surge of public interest in and support for various forms of higher education all over the world.

When India won freedom, it inherited an economy ruined by colonial exploitation, ravaged by war and famine and its balance upset by the blow of partition. The most pressing problem was poverty. Fortunately, India is endowed with vast natural resources. The task before the nation was, therefore to harness these natural resources in a systematic manner to achieve the objectives of social and economic progress, securing to all its people a better quality of life. The planners realised that of all the resources which a country possesses, potentially the most valuable resource is the human being and, therefore, the most profitable investment could be in the development of its people. Thus the Five-Year Plans made liberal provisions both in the Central and State sectors for the expansion of education.

We have today a vast network of educational institutions. There are more than 124 universities, about 4,300 colleges, 44,000 secondary schools, six lakh elementary schools, 35 lakh teachers and 10 crores of students. There are more than 106 medical and 140 engineering colleges. The stock of educated persons, with matriculation and higher qualifications is estimated to be about 370 lakhs in 1978, out of whom 65 lakhs would be graduates and post-graduates. The Planning Commission's estimates indicate that the total stock of matriculates and above in 1983 is likely to be 520 lakhs out of whom 90 lakhs will be graduates and above.

We have, a high level trained manpower, whose size is the largest in the world, with the third largest scientific and technical complement, the top levels of which are comparable to those of the developed countries. Many of our scientific and technical personnel have been emigrating to Europe and US and also to the developing countries of Asia and Africa.

This quantitative expansion regardless of the type of manpower required, has created a problem of large-scale educated unemployment. According to the records of the employment exchanges, the number of job seekers has increased from 5.91 lakhs in 1961 to 51.04 lakhs in 1976. Another disconcerting situation is that the percentage of educated job-seekers to all job-seekers has increased—it was 32.2 per cent in 1961 and 52.2 per cent in 1976. The number of educated job-seekers has been increasing at an annual (compound) rate of 14.5 per cent during 1961-76 against 11 per cent of all job-seekers. The current unemployment rate among graduates is about 10 per cent. If the present trends continue, this rate is likely to increase to 15 per cent. This means that the number of unemployed graduates will be nearly doubled from 7 lakhs in 1978 to 14 lakhs in 1983. General arts, science and commerce graduates account for about 6 out of 7 lakhs of unemployed graduates at present and they will account for more than 12 out of 14 lakhs unemployed graduates in 1983. This is mainly because the educational system will be pouring into the labour market about 5.37 lakh graduates every year; and according to the Planning Commission's estimates, the organised sector may annually absorb only 3.91 lakhs so that about 1.5 lakh graduates would be added every year to the present stock of unemployed.

These estimates relate only to those persons who seek jobs through Employment Exchanges. The real position is much more alarming. On the basis of the findings of a recent Directorate General of Employment and Training survey of the employment exchange registrants and after incorporating an assumed minimum income level in the definition of "employment", it is estimated that the actual number of the educated unemployed may be of the order of 37 lakhs.

There is no doubt that emphasis on education in our planning for economic and social development has paid rich dividends. India's achievements in all fields of economic activity have been impressive. Production in agriculture has doubled and in industry trebled and on an overall basis, India today ranks 8th among the top industrialised countries of the world. However, in a developing and self-generating economy, productive employment of one educated person should lead to the employment of several

*Chairman, UPSC, New Delhi.

others. But this has not happened to the desired extent in India. Moreover, the rate of growth has not been commensurate with the investments and has been far short of the target fixed by the Planners. In the circumstances, it will be worthwhile to take a fresh look at our educational system.

On a critical analysis it appears that our manpower planning has not been satisfactory. It is a paradox that even when a large educated unemployed and underemployed manpower is available, so many tasks remain to be accomplished. There seems to be lack of adequate synchronisation of the programmes of socio-economic development with the qualitative and quantitative aspects of education. There is no matching of education and skills with the development needs. Even in specialised and professional fields, such as engineering, there have been frequent imbalances in the demand and supply.

This situation may be attributed to the *laissez-faire* policy in the expansion of education under which schools, colleges and even universities have proliferated without regard to the standards of education. They liberally offer facilities in general arts, commerce and science, directed to the production of clerical skills rather than developing qualities required for more productive occupations. This phenomenon is not unique to India and has been witnessed in other developing countries also where demand for education has been fuelled by critical manpower needs, parental pressures for more years of schooling for their children and thus better job opportunities, and the conviction that education is a human right for all citizens.

The other factor responsible for the high incidence of educated unemployment in most cases is the sub-standard education. There are huge failures at all levels of education. The pass percentage at the matriculation or higher secondary stage has been around 55. At the undergraduate level also it is around 55. First divisioners do not exceed 4 to 5 per cent. Employability is partly a function of the quality of education that an individual has received. Those who have passed examination in third division do not contribute much because of the low level of the achievement and another 45 per cent who have failed represent a total loss.

During the current year, Government expenditure on education is of the order of Rs 2,500 crores, next only to that on defence. It is shocking to think that about 70 per cent of this expenditure is wasted in the form of 45 per cent failures and about 25 per cent third divisioners. Such colossal wastage of human and financial resources should not be allowed to continue. The most urgent task before educationists is to improve the quality and standards of education so that the products of education can be employed usefully.

As the primary objective of education in a developing country is its economic and social progress, education should have relevance to the existing and emerging needs of the society. Greater attention should be paid to the curricular re-orientation, which should not merely be an exercise in deletions of subjects but re-structuring of the educational content. Vocational content should be built into the courses of study and as far as possible, applied aspects of various subjects should be emphasised. Attempts should be made to foster in the students managerial and entrepreneurial skills so that after completing their studies, they are able to be self-employed rather than look for jobs. Educational institutions should be encouraged to provide extension services for the improvement and modernisation of the neighbouring localities which will also help to develop among the students a practical outlook and a sense of service to the community. Emphasis on professional, vocational and applied education does not, however mean lower priority for liberal education in arts and humanities. In fact liberal education should be incorporated even in professional and vocational programmes of education.

There is need for diversification of education in order to develop knowledge and skills required for the existing and emerging technologies. For this purpose, there should be emphasis on more vocational courses. Efforts should be made to identify talents, aptitudes and interests of the students at an early stage so that they could be helped to opt for vocations for which they may be most suitable.

More intensive efforts are required to develop training programmes based on modules of employable skills and for graduation and combination of skills in relation to the manpower needs. Perhaps, it will be helpful if trainees spend short spells of time on professional jobs in between their courses as this would stimulate in them interest in the profession and create desire to develop knowledge, aptitude and capabilities—qualities which are prerequisites to a successful career, be it on their own or in any employment.

Over-emphasis on formal education with its single point entry, annual sequential promotions, insistence on full-time attendance and exclusive use of whole-time teachers, equipment and other educational facilities is costly and restricts the scope of education to only those persons who can engage themselves in education on full-time basis. Therefore, a young man who secures a job at an intermediate stage of his career cannot afford to accept such employment without sacrificing his academic career. Besides, in terms of finances, expansion of formal education in India has reached a critical stage, which cannot be exceeded without sacrificing expenditure on other welfare and productive activities.

Although there is increasing demand for higher education among the masses, which in a democratic system like ours cannot be denied to them, it is not possible to expand facilities for full-time formal education, unless sub-standard institutions are allowed to multiply. In the circumstances, the development of non-formal education as an alternative cannot be further delayed. There should be adequate avenues for part-time and non-formal education including correspondence, private study and open university courses with the use of modern educational aids like radio and television.

Universities and colleges should be encouraged to shift their emphasis to non-formal systems, providing

a variety of job-oriented curricula with greater flexibility in respect of completion of time, age of admission and multiple entry. This would reduce the load on the formal day-time education, enable youth and adults to improve their knowledge as and when they can avail themselves of it and at the same time reduce the cost of education.

There should be courses in arts, humanities, commerce, social, natural and engineering sciences for in-service persons to improve their professional competence and promotion prospects. In fact, in-service education is superior to mere theoretical education. It is to be remembered that to fortify the mind with practical knowledge, enlightenment and understanding of the world around is to ensure and inspire an intellectual awakening which can be a precursor for all national development and progress.

We have been caught in a vicious circle when degrees are taken as passports to employment and the degree-holders consider employment inservice as the only objective. Thus, every job-seeker is forced to secure a university degree. The result is uncontrolled rush to educational institutions with consequent deterioration of academic standards and discipline. This is causing great disappointment and frustration among the educated young men.

Several attempts have been made to restructure the educational pattern in order to determine terminal points at which the students are expected to leave education and seek employment. Since Independence we have considered three schemes, 10+2+2, 11+1+3, 10+2+3 and now another scheme (8+2+2+3) is being thought of. The relationship of education and employment in India is too complex a problem to be solved by mere arithmetical jugglery. The crux of the matter lies in having an effective mechanism for siphoning off the students at various terminal points of education and attracting them to gainful employment. The situation calls for coordination of the employment policies with the education system. A suitable scheme should be evolved on regional and national basis having regard to all the complexities of the problem.

In 1974, the UPSC recommended to the Government a scheme of National Merit Examination. This envisages holding employment-oriented examinations on national and regional basis at levels corresponding to the different terminal points of education so that young men at various stages of their career—whether they had any formal, non-formal or self-education—could appear in the National Merit Examination of appropriate level and those who qualify would be declared successful for employment under the Government, semi-Government organisations, public enterprises and educational institutions.

The objectives of the scheme are:

- (a) To delink degrees from employment.
- (b) To arrest uncontrolled rush towards educational institutions so that only those should go for higher education who have aptitude and real interest.
- (c) To create a sense of purpose in studies among the students and divert their attention from non-academic and agitational activities to professional and academic pursuits.
- (d) To establish national standards of achieve-

ment, which every educational institutions or individual should try to attain. This will ensure optimum standards of education for maintaining levels of efficiency and production.

(e) To help candidates to find jobs quickly on the basis of a single application and examination instead of wasting their time, energy and resources in frustrating efforts by repeatedly applying and getting rejected for jobs in different organisations.

(f) To help employers to get suitable men for employment quickly without conducting separate examinations and tests.

(g) To provide a proper mechanism for accurately forecasting manpower requirements and help synchronisation of the demand and supply position between the educational system and employment market. This will also make readjustment of the educational and training facilities possible to the changing economic and technological requirements.

The scheme of National Merit Examination should have an element of flexibility in it. Thus, for the purpose of recruitment to the posts requiring specialised knowledge, skills and experience provision would have to be made for the modification of the scheme to suit specific requirements of the job. The scheme has received wide response and enthusiastic support from students; educationists, the press and the public as also from the UGC and State Public Service Commissions.

It has also attracted the attention of leading private sector industrialists who have welcomed the idea. The Planning Commission in its report on the Draft Five-Year Plan 1978-83 has commended the idea that the possession of job-specific knowledge and skills on the part of candidates need to be "tested by means of open public examinations for which no general educational qualifications may be required".

In a developing country the problems of education cannot be solved in isolation. They are inter-linked with complex social and economic compulsions. Moreover, in a democratic set up like ours, it is not possible to reduce the rate of expansion of education without serious social and political repercussions. Therefore, for any satisfactory solution, all these aspects have to be considered in entirety. The National Merit Examination provides such a solution with an inbuilt mechanism within the educational system to regulate numbers, to synchronise the supply and demand situations in respect of educated manpower and at the same time ensure certain standards of achievement.

According to this scheme, students would have the opportunity to opt for various alternatives of education and occupation suited to their genius and requirements of the country on a voluntary basis. It is true that the dimensions of total employment opportunities are set by the overall level of socio-economic development in the country at a given time. But it is also true that even within these limitations, a lot could be done if there were a coordinated approach to the problem having regard to all the concomitant factors. The National Merit Examination is a step in this direction. □

(Courtesy : The Hindu)

Educating the Teacher

V. S. Mathur

No system of education, no syllabus, no methodology and no textbook can rise above the level of the teachers. If a nation wants quality education it must have quality teachers.

In India the basic trait of the system of education has been constant change. We have seen the birth and death of many new ideas in education since Independence. The failure of one idea led to another and yet another. Basic education, 11 year courses, vocationalisation and work experience are some of the ideas that have been struggling for survival in the years just gone by. The 10+2+3 pattern and its variants such as alternatives the 8+4+3 of the 7+5+3 systems are likely to meet a similar fate. Things always go awry for the simple reason that we hurriedly go on planting new ideas on ground totally unprepared for the purpose.

The success of any new idea in education, depends on the preparation of a large number of adequately trained teachers at all levels of education. We must realise that in the final analysis it is the lay teacher on whom the real responsibilities for the success or failure of a scheme falls. The teacher is the key figure in any scheme of education and without his proper orientation it is futile to expect any appreciable success anywhere.

The Education Commission (1964-66) and the Secondary Education Commission (1952-54) have correctly emphasised the importance of pre-service as well as in-service teacher education.

The appointment of the Standing Committee on Teachers Education by the U.G.C. and the creation of the National Council for Teacher Education by the Union Education Ministry are sure evidence of the nation's anxiety to bring about improvement in the field of teacher education.

However, teacher education has so far failed to get out of the stage of official lip sympathy. Neither the University Grants Commission nor the Universities have so far recognised good teacher education as a national priority.

The State Governments have been dealing with the problem in a most casual and ad hoc manner. Stray and unacademic decisions are sometimes taken by these authorities without an eye to good education. One or two states have completely stopped all teacher education schemes on the plea that there are a lot of unemployed teachers. I fear that they may one day close all educational institutions because there are a large number of unemployed, educated youth.

Some states have suddenly come out with the brilliant idea of drastically cutting down the intake of training colleges without taking into consideration the economic or academic viability of these institutions. One northern state has prescribed a ridiculously higher weightage to rural students in the matter of admissions.

Some Universities prefer their own graduates and some carry on subjectwise admissions. Such adhocism carries us nowhere. It will certainly be a tragedy if one comes to the conclusion that the best teaching talent is located mainly in the rural areas or only in certain legislator's constituencies.

It is also very strange that unlike in some other countries we have not so far cared to get the vital question examined in depth at the national level through a national expert group. It may be interesting to know that in Britain two independent commissions were appointed to examine the problems of teacher education in the last 30 years. It is high time that such a commission is appointed at the national level in India.

I would go further and vote for a separate Grants Commission for Teacher Education; and for the institution of separate teacher education universities on the pattern of the agricultural universities and the I.I.Ts.

The basic questions that need to be answered immediately are: Are the right type of people joining the teaching profession? This may involve a complete overhaul of the admission policies and procedures. The main anxiety should be to locate teaching talent and not only satisfy individuals or groups. Reservations have proved most injurious in professional areas.

Are our colleges of education effective? If not, why not? Our training programmes are usually examination oriented and not need and attitude oriented. Examination scores cannot be equated with teacher efficiency. For such an orientation it is necessary to have proper climate, staff and physical facilities.

How many of our colleges of education satisfy these criteria? Careful scrutiny is necessary to eliminate sub-standard institutions. Can our politicians muster courage to do this?

A comprehensive college of education with a large intake and providing training at all levels under one roof, may be more effective and economical than small one-track institutions. All training programmes will also have to function under the university umbrella.

It may also be worthwhile if an experiment is made with specialized colleges of education instead of the present cafeteria types.

These comprehensive colleges of education can also be developed as strong centres of in-service education and as centres of adult education.

Another question to be examined critically is whether professional training should continue to be given in isolation from general education or we should have integrated courses of education as is being done in many advanced countries of the world. Integrated courses are certainly in line with the training programmes available in other professional areas like engineering or medicine. The idea behind such courses is to prepare a teacher in properly selected content matter and practice oriented methodology simultaneously.

Kurukshetra University was the first to initiate

(Continued on page 1196)

Fifth Administrative Development Programme

Prof. R. C. Paul, Vice-Chancellor of Panjab University in his presidential remarks at the valedictory function of the Fifth Administrative Development Programme held in the university said that administrators should evolve suitable alternatives to get over the deficiencies and supplement the system with new managerial techniques. It was good that administration was beginning to get importance. He hoped that storage of information and its processing which usually caused delay in administration would be reduced.

Prof. P. L. Tandon, Director-General of the National Council of Applied Economic Research in his address suggested that universities should come forward and introduce academic and institutional administration courses

Registrars, Deputy Registrars and Administrative Officers from fifteen universities.

The programme was organised by the University Department of Commerce and Business Management in collaboration with the Seminar of Registrars and Administrative Officers of the Administrative Staff College of India, Hyderabad.

Madras Varsity to affiliate staff college

Madras University has agreed to grant affiliation to the Defence Services Staff College at Wellington and to award master of science degree in defence studies to the graduates of the college. The visiting committee of the university inspected the staff college campus and was impres-

sioned every year to the forty-five week course.

The students from Afghanistan, Australia, Bhutan, Canada, Germany, Indonesia, Sri Lanka, the United Kingdom and other countries also attend the course along with Indian officers.

A few officers from the Indian Administrative Services, the Indian Accounts and Audit Services, the Police including the Border Security Force are also trained at the staff college.

Dr. C. R. Mitra, Director, Birla Institute of Technology and Science, has taken over as President of the Association of Indian Universities w.e.f. 9th September, 1978 from Dr. L.S. Negi who has relinquished charge of the vice-chancellorship of Himachal Pradesh University.

Action programme on farm research

Dr. C. Krishna Rao, Vice-Chancellor of Andhra Pradesh Agricultural University while addressing the co-ordination committee meeting of the Regional Research Stations for forage production and demonstration, emphasised the need for an action oriented programme to increase fodder production in the country. He said suitable technology should be evolved to grow fodder in lands which could not be used for agriculture.

Dr. Krishna Rao said agriculture must set base for the livestock production in the country. Unless a break-through in fodder production was made there could not be an increase in the cattle population. There was tremendous agricultural and industrial growth in the country but the economic growth did not keep pace with it. The green revolution had benefitted the rich farmers which resulted in wide disparity between them and marginal farmers.

Dr. Krishna Rao said that he had set up a committee of specialists from the university, the Regional Stations and Dryland Farming Research Station at Hyderabad to launch an action oriented programme on fodder crops.

CAMPUS NEWS

which would reduce the existing gap between academia and administration. He said in most of the universities the ratio of expenditure on the academia and the administration was greatly tilted in favour of the former. The gap should be bridged and the administration which was a supporting force should be put on par with the two other important dimensions of university life—research and teaching.

Mr. D. P. Verma, Registrar of the University and Programme Coordinator of the seminar hoped that the gap between faculty and administration would reduce with the interaction of fresh concepts.

Mr. M. K. Subramaniam of the Administrative Staff College of India read out the report of the seminar which was attended by

sed by the quality and excellence of instruction at the staff college which is one of India's oldest military institutions. The detailed modalities for award of the degrees are being worked out by the university.

Maj. Gen. Mohindar Singh, Commandant of the staff college said in Madras that the objective of instruction at the staff college was indepth study of problems with full participation of the students. The emphasis is on professional training and a fair amount of effort is devoted to general education and broadening of outlook of the officers.

The staff college imparts training to officers of all the three services—the army, the navy and the air-force in a fully integrated approach. About three hundred students at the level of Major are

Educational development in India

A study by the Union Education Ministry has shown that although India is well advanced and treated a centre of higher education for providing educational facilities to the sixteen thousand overseas students, it can also benefit from the successful programmes of other developing countries for achieving university literacy.

The Ministry has made known to the United Nations Educational Scientific and Cultural Organisation that it would like to benefit from the experience and innovations in the developing countries in the field of universalisation of elementary education through non-formal methods for both young and adults.

In addition to providing reserved seats in its institutions of engineering and technology for students from several developing countries, India is offering consultancy services and technical know-how through the Indian Institutes of Technology, Indian Institutes of Management and other well-established institutions. A number of international post-graduate courses in chemistry, physiology, himalayan geology, hydrology and other subjects were organised.

The National Staff College for Educational Planners and Administrators has carried out training programmes for senior education officers of many Asian countries. Members of its staff have gone to some of these countries and organised programmes in educational planning and administration.

The National Council of Educational Research and Training is in a position to offer the services of experts in science education, audio-visual education and vocational education.

The Archaeological Survey of India admits students from developing countries for training in all aspects of archaeological work, and is in a position to train the personnel in maintenance of archives.

In the sports field, leading hockey players from India have gone to other developing countries on coaching assignments.

India will welcome badminton coaches from Indonesia, football coaches from Malaysia, tracks and field coaches from Kenya and basket-ball coaches from the Philippines.

The Lakshmibai National College of Physical Education in Gwalior and National Institute of Sports at Patiala are offering training courses to physical education teachers from the developing countries.

Policy on adult education

Union Education Minister, Dr P. C. Chunder said recently in Calcutta that the Education Ministry will release the funds for spread of adult education to those organisations who are devoted purely to education and whose cases are recommended by the state governments. The state governments would have a major share in the implementation of the adult education programme highlighted in the national education policy. The policy would be placed before the Parliament in the winter session. He said the suggestions to make education more widespread and to impart social and other values in it have been incorporated in the policy.

He did not agree with the view that education in the country was still a privilege of the richer people. Hundred million students were studying in different institutions which included five lakh primary schools, one lakh middle schools, forty thousand secondary schools, twelve thousand higher secondary schools and four thousand five hundred colleges. Education is already widespread and the national policy would highlight the programme for extension of primary and non-formal education along with adult education.

Dr. Chunder said that the national policy would incorporate

a programme for suitable changes in the curriculum to impart social sense to mass education. He thought it was not possible to delink the jobs with education in case of medical, engineering and technical education where one was necessarily required to qualify by obtaining a degree. The proposal would be considered for general purpose education for which even today no degree was required for certain lower categories of jobs in the government departments.

Dr Chunder said that there would be no imposition on the pattern of education and language to be followed by the states. He felt different patterns of academic education or study of language would not stand in the way of implementing a national policy on extension of education.

Panjab principals consider continuing education programme

Prof. R. C. Paul, Vice-Chancellor of Panjab University in his inaugural address at the conference of principals of Panjab University colleges said that universities and colleges could no longer function in isolation and they should play a significant role in removing illiteracy in the country. As education was a life-long process, it should be made available to the people of all age groups. He said educational institutions could make available opportunities in the field of continuing education to some of the target groups.

Mr K.L. Zakir, Programme Coordinator of the centre for continuing education of the university said that government aimed at imparting education to about ten crore people in the next five years. He expected that all governmental and non-governmental agencies, students, teachers and universities would cooperate in the programme.

Mr J.D. Sharma, Director of the Indian Adult Education Association assured the principals that the Association would provide necessary expertise for the adult education programme.

Plans for universal elementary education

Mr P. Sabanayagam, Secretary of the Union Education Ministry has expressed the hope of achieving universal elementary education in seven years time. He said in New Delhi that 320 lakhs children in the age group of 6-14 will be enrolled into formal and non-formal educational institutions during the five year drive. The remaining ten per cent of children would be brought into the stream of universal education during the first two years of the next plan period.

The State Education Ministers at their annual conference held last year as well as this year had endorsed the plan for universalisation of elementary education. A determined effort would be made during the five years drive to increase the enrolment of children into the elementary education system from the present annual rate of 26 lakhs. The plan would rely heavily on enrolling children into part-time formal and non-formal elementary education courses. While 160 lakhs children will be taken into formal full time classes, an equal number of children including drop-outs would be given part-time education in formal and informal institutions.

The Education Secretary said the successful part-time formal system in Madhya Pradesh has been commended to other states for adoption. The system requires the use of existing schools and adopt the regular syllabus in classes to be held at a suitable time according to local conditions. Additional teachers—some of them unemployed graduates—would be appointed to take these part-time classes.

Mr Sabanayagam said the allocation of Rs 900 crore by the Planning Commission fell short of Rs 1,000 crores estimated to be the programme's requirement during the current plan period. Additional funds might, however, be available from allocation for tribal development. The National

Council of Education Research and Training is collaborating with the Literacy House of Lucknow to prepare a training package programme of non-formal education for tribals.

The Centre had a special scheme of assistance for the states which accounted for seventy-five per cent of un-enrolled children in the country.

Call to educate the illiterate

Dr. Malcolm Adiseshiah, President of the International Council of Adult Education in his address on the occasion of International Literacy Day called upon the universities and colleges to educate at least five per cent of total illiterates in the country every year.

He announced that the Pahlavi Prize donated by the Shah of Iran through UNESCO for outstanding national literacy work had been awarded to Tanzania. A similar prize donated in the name of Mrs Krupskya, wife of Lenin had been awarded to the National Literacy Programme of Vietnam where all adult illiterates in North Vietnam had been made literate under the programme. He said these awards were approved at the UNESCO meeting held in Paris recently.

Six organisations and institutions including the Ahdhra Mahila Sabha and Dr Wealthy Fisher of Lucknow are among those about whom there was 'honourable mention' by UNESCO in the Paris meeting.

Shri C. Aranganayagam, Tamilnadu Education Minister made an appeal to the voluntary and social organisations to co-operate and encourage people in the adult education programmes. He advised teachers and students to involve themselves in the adult education campaign to be launched on October 2 and create an interest among the adults to get educated.

Adult literacy drive from October 2

Dr. P.C. Chunder, Union Education Minister said in his inaugural address at the tenth annual conference of all-India Federation of University and College Teachers' Organisations in Calcutta that the Centre will launch the biggest ever adult education programme on Gandhi Jayanti day. Dr Chunder announced that priorities in the field of education had been shifted following the decision taken at the Education Ministers' conference. The priority related to universalisation of primary education besides adult literacy.

He said about 6.5 crores children in the school going age did not attend school at the moment. There was also the problem of school drop-outs. The government had earmarked sixty per cent funds for these programmes.

The Planning Commission has earmarked Rs. 200 crores for the implementation of the programme.

The Union Education Ministry estimates that Rs 686 crores would be needed for achieving the Sixth Plan target of 6.5 crores neo-literates.

Awards for scientists

The University Grants Commission has announced the Hari Om Ashram Trust awards for 1975 to the following scientists:

Prof. C.N.R. Rao of the Indian Institute of Science has won the C.V. Raman award for experimental research in physical sciences. Dr. C. Ambasankaran of the Bhaba Atomic Research Centre, Bombay has got the Homi J. Bhabha award for research in applied sciences.

The Meghnad Shah award for research in theoretical sciences is to be shared jointly by Prof. A.N. Mitra, Department of Physics, Delhi University and Prof. P.M. Mathew of the University of Madras.

Sir J.C. Bose award for research in life sciences is to be shared among Prof. M.R.N. Prasad, University of Delhi, Prof. N.R. Moudgal of the Indian Institute of Science and Prof. G.P. Talwar of the All India Institute of Medical Sciences in New Delhi.

NCC introduces agricultural based camps

Maj. Gen. Mathew Thomas, Director General of the National Cadet Corps in his address at the combined annual training camp at Secunderabad said that NCC cadets had conducted a survey of manpower and other resources in two blocks of Haryana as a pilot project of far reaching significance to the economic development of the country. He said that the information collected by cadets under the state government development scheme would be analysed by the Indian Council of Agricultural Research which would draw up a five year programme for the block. The project could be implemented on a country-wide scale if it proved a success.

He suggested that each NCC battalion should adopt a village on permanent basis. NCC could also be used for social service activities involving rescue operations during floods and other natural calamities.

He gave a detailed account of present and future adventure training courses of NCC. He said skin and sky diving would be introduced as part of the adventure training programme for the NCC cadets.

The cadets for these adventure training programmes would be selected from all over the country.

He urged the NCC cadets to maintain discipline in order to be an example to other students. He advised them to study well to become worthy citizens of the country.

Major General Thomas said it was proposed to raise fifty more battalions of NCC in the country in the next two years. There were twelve lakh NCC cadets out of fifty million students population in the country.

HP Krishi Vishwavidyalaya

The Bill providing for establishment of Himachal Pradesh Krishi Vishwavidyalaya with its headquarters at Palampur has been adopted by the Vidhan Sabha.

The objects and reasons of the Bill provide for an agriculture university for the development of

agriculture, animal husbandry and allied sciences. The jurisdiction of the proposed university will extend to whole of Himachal Pradesh. Agricultural colleges, research and experimental stations and other institutions under the jurisdiction of agricultural complex of Himachal Pradesh University will now be the constituents of the proposed university.

The Governor will be the Chancellor of the University and the first Vice-Chancellor will be appointed by the state government for a period of five years.

The budget estimates provide for non-recurring expenditure of Rs. 3.60 crores and recurring expenditure of Rs. 5 lakhs.

Panjab Varsity to stage Indo-Pak hockey test

The Chandigarh Sports Council has approved the proposal of Panjab University for a special grant to stage a hockey 'test' between the combined universities teams of Pakistan and India. The Council meeting was attended among others by the Vice-Chancellor of the university, Prof. R.C. Paul and Secretary of the University Sports Committee, Dr. (Miss) Jatinder Bhullar. The Pakistani team is to tour India in the last week of January next year.

The sports division of the Association of Indian Universities had informed all the universities for possible 'test' and other matches to be staged during the stay of the visiting team. The Secretary of the University Sports Council said in Chandigarh that the university would write formally to the A.I.U. for staging the 'test'.

Kashmir Varsity convocation

The fourth annual convocation of the University of Kashmir for conferring degrees in various faculties will be held on October 14, 1978 at the University Campus, Srinagar.

Shri L.K. Jha, Chancellor of the University will preside. Dr. A.R. Kidwai, Chairman of the Union Public Service Commission

will deliver the convocation address.

Sports complex at Calcutta

The Union Minister of Education, Dr. P.C. Chunder announced in Agartala that work for setting up Regional Institute of Sports at the Rabindra Sarobar Stadium in Calcutta will be started soon. He said the proposed Institute would have an important role to play in the development of sports mainly in the backward states and union territories in the region.

Madurai University renamed

The Tamil Nadu Assembly adopted a Bill to rename the Madurai University as Madurai Kamaraj University. The State Education Minister, Mr. C. Aranganayagam said in Madras that the University was being renamed to cherish and perpetuate the memory of national leader late K. Kamaraj.

Seminar on use of computer

Dr. P. Sivalingam, Vice-Chancellor of Arignar Anna Technological University and Chairman of the Computer Society of India said in Madras that the computer festival was being observed in connection with the birth anniversary of Sri Visveswaraya.

Prof. N. S. Ramaswamy, Director of the Indian Institute of Management, Bangalore dwelt at length on various aspects of the use of computer and brushed aside the view that automation would lead to large scale unemployment. He argued in favour of the formula which would end the controversy over automation—what man can not do may be allowed to be done by Computer. The confusion on the issue was mainly due to lack of better understanding on the potentials of computerisation and coordination at higher level. He said there were areas like export-oriented activities, decision making and higher level applications, where computerisation would be essential. Production could be planned with the aid of computer at levels not feasible earlier. The vast planning would generate employment potential instead of curbing it.

NSC organises workshop in Indian History

The National Staff College for Educational Planners and Administrators, New Delhi, organised a four-week workshop in Indian History and Culture for Supervisors and Curriculum Directors of social sciences from the United States of America. The course was attended by eighteen participants.

The workshop was designed to meet the professional needs of special studies of the participants. The main objectives of the workshop were to study different aspects of Indian History and culture; to familiarise the participants with the trends in education and changing patterns of development in India; to improve understanding of the historical currents, Cross currents of modern India which will be helpful for improvement of teaching of Indian history and culture in America and to further mutual understanding with the help of Indian scholars. The workshop included lecture discussions on several aspects of Indian history and culture including the themes identified by the participants.

Apart from the field study of the selected institutions of educational importance, review sessions with faculty members were also arranged for benefit of the participants.

The workshop was inaugurated by Prof. V. V. John, former Vice-Chancellor of Jodhpur University. Shri Jagat Mehta, Secretary of the Union Ministry of External Affairs delivered the valedictory address.

Unesco suggests literacy decade

The Unesco-sponsored meeting of panel of experts for research and training in literacy in Asia held recently in New Delhi has suggested to its member countries to observe next ten years as 'literacy decade'.

The meeting was inaugurated by the Union Education Minister, Dr. P. C. Chunder who outlined the steps being taken by India

to remove illiteracy. He said India has planned a package of measures to deal with the problem of universalisation of education, adult literacy and non-formal education for drop-outs.

The Union Education Minister proposes to convene a meeting of leading journalists and editors to discuss the suggestion that journals and newspapers carry some material for the neo-literates. The proposal would lead to easy distribution of such material and create new readership for these periodicals.

Need to augment research efforts

In his lecture on the application of science to India's problems, Dr. Indra Dev, Faculty Member of the Administrative Staff College of India, emphasised the need for augmenting scientific research and improving the management system to meet fully the basic needs of our people. He said India was the first country outside the socialist group to formally recognise the importance of science in the growth and prosperity of the country. The total expenditure on scientific research and development in India during 1976-77 was Rs. 411 crores which is 0.6 per cent of the GNP. Ninety per cent of the expenditure has been incurred in the government sector. He said that by 2000 AD the country would need about 225 million tonnes of foodgrains to feed everyone. He suggested to augment the scientific research to achieve this target.

Dr. Gurbakhsh Singh, Vice-Chancellor, Hyderabad University presided over the function.

The lecture was organised under the aegis of Institute of Asian Studies and India International Centre.

CBSE to have social work as a subject

The Central Board of Secondary Education has approved a scheme providing for one-fifth of school hours to be devoted to socially useful productive work

from the next academic session. The scheme will cover nearly twelve hundred schools affiliated to the Board.

Physical and health education, co-curricular and other activities will form a subject. This along-with SUPW will be assessed internally on a seven-point grade scale. The other five compulsory subjects will be two languages besides mathematics, science and social science.

SUPW will also include a practical test. The certificate to be issued by the board will mention the nature of socially useful productive work undertaken by the candidate.

The board's decisions are in terms of the recommendations of Patel Review Committee which sought to lighten the work load in the elementary stage and to establish a link between the community and the student.

National library

The Union Ministry of Education has decided to set up a commission with distinguished educationists and specialists in library science to advise the government on the structure, functions and administration of the National Library at Calcutta. It will also suggest changes in the National Library Act now in abeyance keeping in view the new role of the library. The need for change in the act is felt as the present act was modelled on the public library system of 1903.

The National Library till recently under the Cultural Affairs Department of the Union Education Ministry is now functioning under the direct control of Bureau of Literature and Library, a new wing of the Ministry.

Remuneration to examiners in U.P. Varsities

The Uttar Pradesh Government has amended the rules for payment of remuneration to examiners for evaluating the answer books in university examinations.

The university teachers as per the amended rules will not be expected to evaluate more than

three hundred answer books upto the graduate level and one hundred fifty upto the post-graduate level in an annual or semester examination. The same standard will be applicable in case of correspondence courses and private candidates examinations.

The amendment further provides that the state government will have no objection if teachers are paid remuneration subject to certain conditions for duties like tabulation, scrutiny etc. after the examination.

National education policy

Dr. P. C. Chunder, Union Education Minister will informally discuss the national policy on education with the state chief ministers. Dr. Chunder is planning to meet the Chief Ministers in group or individually to obtain their views on the proposed education policy.

The policy document has been prepared by the Union Education Ministry and discussed by a committee of experts. It was sent to the state governments for their opinion sometime back. Certain state governments have not sent back their suggestions to the Union Education Ministry. Their views therefore will be obtained personally by the Union Education Minister.

The national policy is expected to be placed before the winter session of Parliament.

Osmania to open adult study centres

The National Service Scheme of Osmania University will organise seminars in various colleges to create a favourable environment for adult education as part of the programme to celebrate the International Literacy Day. Students and teachers will coordinate the development of teaching and learning materials for the National Adult Education Programme to be launched on October 2. The programme envisages opening of two hundred adult education centres on behalf of the National Service Scheme.

BHU plans chair for rural development

Banaras Hindu University plans to institute a chair for rural development.

The three-day all-India workshop on health and population recently held in the university had recommended the establishment of the department. The workshop further resolved to create awareness among the rural people about the need for having a small family for improving the quality of life and accelerating the transformation of society.

Science Academy invites nominations for awards

The Indian National Science Academy has invited nominations for awards to be made to young scientists below the age of thirty in recognition of their outstanding work. The nominations for the awards may be made through the Fellows of the Academy, science faculties of the universities and all-India research institutions. The nominations will be received in the Academy by December 1, 1978.

Forty-fourth mathematical conference

The Mathematics Department of Osmania University will organise the forty-fourth annual conference of Indian Mathematical Society in Hyderabad in the last week of December. About two hundred fifty delegates from all over the country including research scholars and teachers in the field are expected to participate in the conference.

Prof. U. N. Singh, Pro-Vice Chancellor of Delhi University is the President-elect, Prof. P. C. Jain from Indian Institute of Technology, Bombay is the Honorary Secretary, and Prof. Vanaja Iyengar, Principal of the University College for Women in Hyderabad will be the local Secretary.

Need for reform in education

The Prime Minister, Shri Morarji Desai in his recent meeting with

the team of educationists, officials of Union Education Ministry and Planning Commission urged them to make education simple, real and vocational. There was need for reform in education at all the three stages, primary, secondary and university. He said that proper productive manual work should form a part of all adult education programmes. There was need for training and re-orientation of the teacher. The concept of teacher should be widened to include knowledgeable persons from the community.

The educationists and officials were participating in a seminar organised by the Planning Commission to discuss the national programme for functionalisation of elementary education for the period 1978-83. It was felt that the functional elementary education programme should be introduced in the next financial year to be completed in three to five years. The seminar further suggested that implementation of the programme should be through the normal machinery but voluntary agencies should also be used to the fullest extent. The involvement of the community should be secured by way of assistance in teaching and designing the curriculum and in providing facilities like housing for the school teacher.

Garhwal conducts research on himalayan ecology

The Garhwal University complex now being constructed on a hill in Srinagar is facing a grave threat of soil erosion. The Vice-Chancellor of Garhwal University, Dr. Sushila Dobhal said that the University complex when completed will include a spacious administrative block, senate hall, library, museum, staff quarters and a hostel for girls students.

The Vice-Chancellor said that the university was introducing horticulture as one of the subjects from the current academic session. She said, keeping in view the large scale destruction caused by floods in the hills and continuous threat of soil erosion, a team of the University experts had conducted an indepth study of the himalayan ecology.

A list of Doctoral Theses Accepted by Indian Universities

SOCIAL SCIENCES

Library - Science

1. Patel, P. F. A public library system for the Gujarat State : A developmental plan. Gujarat University.

Psychology

1. Sreedevi Ammal, R. Socio-psychological and clinical factors in postpartum sterilization with special reference to Kerala. University of Kerala.
2. Subramonia Pillay, G. Effects of patterns of teaching upon creative thinking among adolescents. M.S. University of Baroda.
3. Wailkhoo, Nirmala. Handwriting and personality. Gujarat University.

Anthropology

1. Bandhyopadhyay, Sukumar. Impact of industrialisation on the tribal population of Jharia-Ranigunj coal field area. University of Calcutta.

Sociology

1. Augustine, John Sunderaj. A sociological study of the Christian community in Nagpur. Nagpur University.
2. Nagla, Bhupendra Kumar. Factionalism, social structure and political parties: A sociological study of Udaipur District in Rajasthan. Jawaharlal Nehru University.
3. Paresk Kumar, B.S. A sociological study of Veera-saiva monastic order. Bangalore University.
4. Parmar, Yohan Ambrose. The mahyavanshi: A study of a scheduled caste in Surat City. South Gujarat University.
5. Radhakrishna Murty, Kothapalli. Social structure and fertility: A study of a folk-community. Andhra University.
6. Roy, Biswanath. A study of some of the socio-psychological factors associated with vocational development. Indian Institute of Technology, Delhi.
7. Xaxa, Virginus. Agrarian social structure and class relations in two villages in Jalpaiguri District: A comparative study of the subsistence and plantation settings. Indian Institute of Technology, Kanpur.

Political Science

1. Bhattacharyya, Kailas Chandra. The administration of higher education in North East India. University of Calcutta.
2. Prasad, Devki Nandan. U.S. food assistance to India; A study of bilateral relations. Jawaharlal Nehru University.
3. Pulparampil, John K. Nation building and local leadership: A study of contrasts in Tamil Nadu and Kerala. Jawaharlal Nehru University.
4. Sharma, P.D. Swatantra Party in Gujarat: Rise growth and decline, 1960 to 1972. Gujarat University.

Economics

1. Alwin Prakash, B. An economic assessment of the performance of the Kerala State Road Transport Undertaking in the period 1959-71. University of Kerala.
2. Babaria, Chhaganlal Hirjibhai. Economics of soil testing service in Gujarat State. Sardar Patel University.
3. Dasgupta, Susil Kumar. Industrial wages in West Bengal: A study of wage awards in the state, 1947-67. University of Calcutta.
4. Giriappa, S. A study in technology adoption under Indian farming conditions. University of Madras.
5. Jafri, Syed Aisha Begum. Projected requirements of educated manpower for the economic development of Madhya Pradesh. University of Saugar.
6. Max, E. Operations research approach to capital budgeting under uncertainty. Kamaraj University.

7. Mukhopadhyay, Sudhansubhushan. Reconstruction of age composition for the states and territories of India, 1881, 1961. University of Calcutta.

8. Patel, Himmatbhai Gomanbhai. Some aspects of states indebtedness with special reference to central loans. Sardar Patel University.

9. Patil, Leela Rangnath. Bhudargad talukyateel shatemajurancha samajik aarthik abhyas. (Marathi). Shivaji University.

10. Sengupta, Manimay. Some aspects of collective choice. University of Delhi.

11. Valuthivaragunasingh, T. A quantitative economic analysis of allocation of resources in Tamil Nadu. Kamaraj University.

Education

1. Inder Pal Singh. A critical assessment of the teaching of Punjabi in the Punjab State at the school stage. Punjabi University.

2. Nanda, Surendra Kumar. A critical study of the development of adult education in the Punjab during the period from 1947 to 1972. Punjabi University.

3. Parikh, Jyoti Kantilal. Study of non-normal children in relation to home environment and special care recreation programmes. M.S. University of Baroda.

Commerce

1. Bladava, Rameshwar Prasad. Madhya Pradesh vikraykar adhiniyam pravridhan evam prashasan: Ek vishlesha-natmak adhyayan. University of Indore.

2. Vinod Kumar. Monetary unification in European Economic Commuunity. University of Delhi.

Home Science

1. Devadas, Rajammal Packianathan. Nutritional improvement of children and the community, D.Sc. University of Madras.

HUMANITIES

Philosophy

1. Kanthamani, A. On linguistic competence: A study of the development of N. Chomsky's principle of competence. University of Madras.

2. Samanta, Sudhirchandra. The problem of a priori knowledge: A critical survey. University of Calcutta.

Language & Literature

English

1. Mishra, Pradyumna Kumar. Man and nature in the poetry of Robert Frost. Kanpur University.

2. Misra, Soubhagyakumar. The quest for heroism: A study through the novels of Bernard Malamud. Berhampur University.

3. Mohanty, Praphulla Kumar. Individual and society in the plays of Arthur Miller. Berhampur University.

Sanskrit

1. Gupta, Rama. A critical estimate of Bhavabhuti and his works. University of Calcutta.

2. Jha, Uday Kant. Chintamani ritya nyayavad, avyav-vad, pratigyavadeshch. Kameshwar Singh Darbhanga Sanskrit University.

3. Jha, Uddist Narayan. Vidyavachspati Madhu Sudan Jha Kritya Kadambani Ka sameekshatmak adhyayan. Kameshwar Singh Darbhanga Sanskrit University.

4. Meera, S. Studies on Dhvanyalika. University of Madras.

5. Pimplapure, Gunakar Waman. A critical study of Anantacarya's commentary on the *kanva* text of the *Sukla-Yajus*. Nagpur University.

6. Singh, Dhupeshwar. Mahamahopadhyay Purushottam Dev virachit chakrasya: Samikshatmak tulnatmakchadhyayanam. Kameshwar Singh Darbhanga Sanskrit University.

Hindi

1. Awasthi, Devi Dutta. Goswami ji ka manav charitra chitran evam prakriti nirupan. University of Saugar.

2. Bhagat Ram. Samsamayik andolanon kee prisht-bhoomi mein chhayavadottar kavya ka adhyayan, 1936-1946. University of Delhi.

3. Dubey, Chitra. Hindi ke anchalik upanyason mein lok sanskriti ka swarup. Kanpur University.

4. Patel, Ramanbhai Dahyabhai. Satven dashak ke Hindi upanyas: Samvadana aur shilp. Sardar Patel University.

5. Sachar, Pushpa. Hindi ke mahakavyatmak upanyas. University of Delhi.

6. Sharma, Narender Kumar. Santon kee darshnik vichardhara ke pariprckshya mein sant Panap Das ka adhyatam darshan. Kanpur University.

7. Shukla, Awadhesh Narayan. Acharya Sadguru Sharan Awasthi: Vyaktitv evam krititv. Kanpur University.

8. Singh, Hanuman. Hindi kee saathottari kavita ka pravrititgat anusheelan. Awadesh Pratap Singh University.

9. Thakur, Hiralal Sewaram. Angrezi Romanticism (Swachhandtawad) ka chhayavadi kavita per prabhav. Nagpur University.

10. Tiwari, Surendra Prasad. Chhayavadi kavya mein kalpana tatwa ka anusheelan. Kanpur University.

11. Tripathi, Onkar Prasad. Jagdhar Bhatt kee Kusumanjali tatha Tulsi kee Vinay patrika ka tulnatmak adhyayan. Kanpur University.

Bengali

1. Bhattacharyya, Kumud Kumar. Saratchandra-O-Bangla krishak. University of Calcutta.

2. Mukhopadhyay, Bidhanbaran. Unabinsa satabdir patabhumikaya Manomohan Bose. University of Calcutta.

3. Mukhopadhyay, Madhusudan. Prachin alankarikder kavyasaundryabader sartheekata. University of Calcutta.

Marathi

1. Mirajkar, Lalita N. Shreedharswami Nazrekar's poetry: A critical study. S.N.D.T. Women's University.

2. Rokde, Manohar Ramchandra. Mahrishi Vithal Ramji Shinde: Vyakti aani vangmay. Nagpur University.

Tamil

1. Annamalai, J. A critical study of Mullai-T-Tinai in Sangam literature. University of Madras.

Telugu

1. Chalapathi, G. A critique on kavikarna rasayanamu. Sri Venkateswara University.

2. Venkata Ratnam, G. Hamsavimsathi: Its encyclopaedic nature. Kakatiya University.

History

1. Hashim, Syed Anis. The potters and ceramic traditions in Panchmahals, Baroda and Broach Districts of Gujarat. M.S. University of Baroda.

2. Jain, Laxmi. Jain Harivansh Puran ka sanskritik adhyayan. (Hindi). University of Saugar.

3. Pandey, Prabha. Prachin Bharat mein istri shiksha ka alochanatmak adhyayan. (Hindi). University of Saugar.

4. Pandey, Pratibha. Markandey Puran ka aitihasik tatha sanskritik vivechan (Hindi). University of Saugar.

5. Shanmugam, P. Revenue system under the cholas. University of Madras.

6. Sharma, Rama. Prachin evam madhyakaleen rajnitik vicharak. University of Saugar.

7. Surianarayanan, P. Development of rule of law in British India upto the period of Lord Dalhousie. Kamaraj University.

Educating the Teacher

(Continued from page 1188)

such integrated degree courses in the country. The four Regional Colleges of Education started in 1961 had a similar basic philosophy. Both the experiments, however, misfired because of lack of proper planning, implementation and follow-up. There is thus need to do some fresh thinking on the subject.

An important question that is being discussed today is whether education should remain on the concurrent list or it should be handed back to the States. Teacher education, in my opinion, is an area which cannot be left to the States. The Centre has to enforce proper concepts as well as procedures and also to provide for pace-setting institutions so that professional standards are maintained.

The Centre has to assume a special responsibility for improving teacher education. There is need to expand the central sector so that the programmes do not suffer from lack of funds or expertise or because of regional politics. No efforts should be spared to upgrade teacher education so that it could play a crucial role in improving standards. □

(Courtesy : The Tribune)

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A list of select articles culled from Periodicals received in AIU Library during September, 1978

EDUCATIONAL PHILOSOPHY

- Cottrell, Alam. "Steersman and outrider case". *Times Higher Education Supplement* (354); 25 Aug 78:9.
- Dore, R.P. "Role of universities in national development". *University News* 16 (17); 1 Sep 78: 1129-33.
- Mehta, V.R. "Challenge on the farm front". *University News* 16(17); 1 Sep 78: 1127-8, 1142.
- Rita Singh. "Tagore, the educator". *University News* 16(18); 15 Sep 78: 1157-60.
- Smart, Ninian. "Dream of a future renaissance". *Times Higher Education Supplement* (352); 11 Aug 78:7.

EDUCATIONAL PSYCHOLOGY

- Anantha Krishnan, P. "Self-confidence and social intelligence: A correlational study". *Indian Educational Review* 13(2); Apr 78: 115-22.
- Girijesh Kumar. "Creative functioning in relation to personality, value orientation and achievement motivation". *Indian Educational Review* 13(2); Apr 78: 110-15.
- Seth, Pramila. "Low academic achievement and emotionality: A study". *Indian Educational Review* 13(2); Apr 78: 97-102.

EDUCATIONAL SOCIOLOGY

- Ray, Anil Baran. "Struggle for political control of the campus: The case of Banaras Hindu University students' agitation of 1968". *University Administration* 4(1-2); Jan-Dec 77: 65-77.

EDUCATIONAL PLANNING

- Adler-Karlsson, Gunnar. "Some future prospects for higher education". *International Association of Universities Bulletin* 26(1); Feb 78: 20-2.
- Campbell, Clifford C. "Administration of admissions". *New Directions for Higher Education* (21); Spring 78: 51-64.
- "EDUCATION FOR rural development: Recommendations". *Journal of Indian Education* 3(6); Mar 78: 52-61.
- Nayar, D.P. "Education for rural development: The case of India". *Journal of Indian Education* 3(6); Mar 78: 3-12.
- "ROLE AND responsibilities of laymen in the governance of universities". *University Administration* (Special Number) 4(1-2); Jan-Dec 77: 1-49.
- Shanbagh, Sunil. "University under siege". *Youth Times* 7(11); 1-14 Sep 78: 10,39.
- Srivastava, Anand P. "Some facets of faculty development". *University News* 16(13); 1 July 78: 1015-6.
- "STUDENT PARTICIPATION in the governance of institutions of higher education: The European experience". *University Administration* 4(1-2); Jan-Dec 77:78-98.
- Turner, Willaim H. "Courting the prospective student". *New Directions for Higher Education* (21); Spring 78: 23-36.

CURRICULUM

- Arakeri, H.R. "Population education". *University News* 16(18); 15 Sept 78: 1156.
- Quinn, T.F.J. "Critical appraisal of modular and their relevance to the British system of higher education". *British Journal of Educational Technology* 9(1); Jan 78: 5-16.
- Reti, Peter G. "Integrative structural objectives". *British Journal of Educational Technology* 9(1); Jan 78:27-35.

TEACHING

- Lal, Pratap Singh. "Microteaching: An innovation in practice

teaching programme". *Indian Educational Review* 13(2); Apr 78: 42-58.

- Sharma, R.A. "Programmed learning in Meerut University: A review". *Indian Educational Review* 13(1); Jan 78: 52-9.

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- Ephraty, Nevat. "Use of VTR systems in instructional situations in pedagogy in a teachers college". *British Journal of Educational Technology* 9(1); Jan 78: 71-6.

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- Isaac, K.A. "What are college libraries and what can they be?: A blue print for action". *New Frontiers in Education* 8(3); July-Sep 78: 1-14.

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- Gupta, Reena and Rawat, M.S. "Diagnostic test in Chemistry". *Indian Educational Review* 13(2); Apr 78: 122-7
- Natarajan, V. and Ved Prakash. "New approach for the construction of practical laboratory and field work examination". *New Frontiers in Education* 8(3); July-Sep 78: 56-64.
- Tanner, Jerone and Dwyer, Francis M. "Visual testing: A viable instructional variable". *British Journal of Educational Technology* 9(1); Jan 78: 55-8.

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- James, Estelle. "Product mix and cost disaggregation: A reinterpretation of the economics of higher education". *Journal of Human Resources* 13(2); Spring 78: 157-86.
- Kapur, J.N. "Education industry". *University News* 16(16); 15 Aug 78: 1095, 1101.
- Menon, I.C. "In the minds of men: Economic aspects of educational planning". *New Frontiers in Education* 8(3); July-Sep 78: 37-51.

COUNSELLING & GUIDANCE

- "BHU PROPOSAL for student counselling". *University News* 16(17); 1 Sep 78: 1142.

ADULT EDUCATION

- Gomez, R. "National adult education programme—role of the educated". *New Frontiers in Education* 8(3); July-Sep 78:97-102.
- Shahane, V.A. "Open university, not a replica of traditional set up". *University News* 16(16); 15 Aug 78: 1102.
- Singhal, Sushila and Kejariwal, S.K. "Non-formal education as an alternative in the Indian education system". *New Frontiers in Education* 8(3); July-Sep 78: 65-75.
- Yadav, M.S., Biswal, B.N. and Menon, M.B. "Correspondence education in Indian universities—a few facts". *New Frontiers in Education* 8(3); July-Sep 78: 76-96.

COMPARATIVE EDUCATION & COUNTRY STUDIES

- Dang, Satyapal. "Whither Punjab Agricultural University?". *Mainstream* 16(52); 26 Aug 78: 7-8, 27.
- Hatimbhoy, Fakhruddin. "Lucknow University: Groping for stability". *Youth Times* 7(10); 18-31 Aug 78: 20-21.
- Mehrotra, Rajiv. "Education: Still a mystery". *Surya India* 2(12); Sep 78: 15.
- Moorman, Paul. "Hongkong—where learning sits at the feet of free enterprise". *Times Higher Education Supplement* (356); 8 Sep 78: I, VIII.

UNIVERSITY OF COCHIN

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11-9-1978

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3. Industrial Fisheries	Reader	1	Fishery Economics	
4. Law	Professor	1	Administrative Law/Labour Law	Reserved
	Reader	2	Criminal Law or Tax Law—1	Reserved
			Labour Law—1	Reserved
5. Marine Sciences	Professor	1	Chemical Oceanography	Reserved
	Lecturer	3	Microbiology (Marine)—1	Reserved
			Microbiology (Industrial)—1	Reserved
			Marine Geology—1	
6. Physics	Lecturer	2	Preferably in Quantum Mechanics/Electronics	
7. School of Management Studies	Professor	2*		
	Reader	2*		
	Lecturer	1*		
8. Ship Technology	Professor	2	Preferably in Ship Design/Ship Motion and Manoeuvrability/Resistance and Propulsion of Ships/Strength of ships and Practical ship-building/ship building technology	
	Reader	2		

Prescribed forms in quadruplicate can be had from the Registrar, University of Cochin, Cochin Palace-P.O., Tripunithura—682301, on payment of Rs. 5/- by cash or Money Order specifying the purpose in the Money Order Coupon. If a person intends to apply for more than one post, application in quadruplicate for each post should be submitted separately. The post for which the application forms are required, should be specifically indicated in the Money Order Coupon. The receipt of remittance should be attached to the requisition for the forms.

Scale of Pay

(a) Professor—Rs. 1200-50-1650-50/2-1750.

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The details of qualifications, age, fee for registration of applications etc. of each post can be had from the University Office along with the application forms. Completed applications should reach the University Office on or before 13th October 1978.

Those who are in service should forward their applications through proper channel. Candidates will have to appear for interview if called for, at their own cost.

Appointments to the posts notified will be made strictly in accordance with the Section 6(2) of the Cochin University Act 1971 (Act 30 of 1971).

If no candidate is found suitable for appointment to a particular post, the candidates might be considered for appointment to a lower post, against the post advertised for.

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*One post each of Professor, Reader and Lecturer in the School of Management Studies is for the Master of Bank Management Course and the other two are short vacancies.

REGISTRAR

GOVIND BALLABH PANT UNIVERSITY OF AGRICULTURE & TECHNOLOGY

Pantnagar, Distt. Nainital

Pin 263145

Admission Notice 1978-79

Applications are invited by 16th October, 1978 for admission to the following degree programmes on prescribed form obtainable from the Registrar, alongwith other details by sending a Crossed Indian Postal Order of Rs. 5/- payable to the Comptroller of this University or in cash at Comptroller's Office accompanied by a self addressed envelope (28 x 13 cm.) bearing postage stamps worth Re. 1/- Name of the degree programme for which the form is required should be clearly written on the envelope.

Separate applications are required for each programme.

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1. Doctor of Philosophy in the following Majors.

1. Agronomy, 2. Agricultural Economics 3. Plant Breeding 4. Plant Pathology 5. Soil Science 6. Animal Breeding 7. Animal Physiology 8. Vety. Pathology 9. Vety. Anatomy 10. Biochemistry 11. Animal Nutrition, 12. Vety. Parasitology 13. Vety. Microbiology & Public Health 14. Horticulture 15. Agril. Engineering.

2. M.Sc. Agriculture

1. Agronomy 2. Agricultural Economics 3. Entomology 5. Horticulture 5. Plant Breeding 6. Plant Pathology, 7. Soil Science 8. Animal Breeding 9. Animal Nutrition 10. Dairy Husbandry 11. Poultry Husbandry, 12. Biochemistry, 13. Microbiology 14. Rural Banking and Agril Economics.

3. M.V.Sc.

1. Vety. Anatomy 2. Vety. Bacteriology 3. Vety. Pathology 4. Vety. Hygiene & Public Health 5. Vety. Physiology 6. Vety. Pharmacology 7. Vety. Gynaecology & Obstetrics, 8. Vety. Parasitology 9. Vety. Medicine 10. Vety. Surgery, 11. Animal Breeding 12. Animal Nutrition 13. Dairy Husbandry 14. Poultry Husbandry 15. Biochemistry.

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1. Farm Machinery & Power 2. Irrigation and Drainage 3. Soil and Water Conservation 4. Process Engineering.

6. M.Sc.

1. Physics 2. Mathematics 3. Biochemistry 4. Microbiology 5. Plant Physiology 6. Food Technology.

7. M.Sc. (Home Science)

1. Foods & Nutrition.

UNDER GRADUATE PROGRAMMES

1. College of Agriculture : B.Sc. Agriculture & Animal Husbandry.

2. College of Vety. Sciences: B.V.Sc. & Animal Husbandry.

3. College of Technology: B. Tech. (Agril/Civil/Elect./Mech. Engg).

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Eligibility qualifications and other requirements for admission to various degree programmes will be supplied with the application form. Admissions are made strictly on merit.

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A residential University with integrated approach to teaching, research and extension. 2. Emphasis on practical training. 3. Student Advisory System. 4. Placement Service. 5. Liberal financial assistance including supply of text books on half price, part time employment as Graduate Assistant @ Rs. 250 and Rs. 200 per month to a large number of Post-Graduate Students, Fellowships and Scholarship etc., U. G. C. Fellowships of Rs. 400 p.m. to M.Tech. Structural Engineering candidates and Ford Foundation Fellowships of Rs. 400 p.m. to the candidates admitted to Ph.D. in Agril. Economics, may be available. 6. Most sophisticated and up-to-date equipments including Computer Centre. 7. Only such candidates should seek admission to the University who believe in hard work and good conduct.

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O. S. Misra
REGISTRAR

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Advertisement No. 17/1978

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Professors in the Grade of Rs. 1200-50-1500-60-1800.

1. One Professor of Public Health Administration in the Department of Social and Preventive Medicine.

2. One temporary Professor of Forensic Medicine.

Candidates must possess five years' teaching experience in the subject concerned as Reader or in an equivalent post.

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3. One temporary Reader in Neurology in the Department of Neurology.

Candidates must possess three years' teaching experience as Lecturer in the subject concerned or in an equivalent post.

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4. One Lecturer in Anatomy.

5. One temporary Lecturer in Bacteriology in the Department of Pathology & Bacteriology.

6. One temporary Lecturer in Social and Preventive Medicine.

7. Two temporary Lecturers in Medicine.

8. One Lecturer in Orthoptics in the Department of Ophthalmology.

9. One temporary Lecturer in Paediatrics.

Candidates must possess three years' experience as Tutor, Registrar, Resident, Demonstrator or in an equivalent post.

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For purposes of qualifications required for the above posts, the degree obtained in a subject taught in a department which is subsequently constituted into a separate department, shall be deemed to be the degree in the subject concerned for the newly created department.

It is not necessary to fill all/any of the advertised posts. Relaxation in the prescribed qualifications may be made in exceptional circumstances in accordance with the Ordinances.

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No consulting/private practice is allowed but the incumbents will be given 50% of the pay as Non-Practising Allowance subject to a maximum of Rs 600/-p.m. on the condition that the total emoluments including the Non-Practising Allowance, will not exceed Rs. 2,700/-p.m.

Those who have applied for the above posts in response to our advertisements No. 26/76, dated 27.9.76, 1/1977 dated 3.2.77 & 6/77 dated 4.3.77 need not apply again. Such candidates may, however, intimate their additional qualifications, if any.

Applications on the prescribed form (available from the office of the Registrar) accompanied with a self addressed envelope 10 cm. x 13 cm. in size, with recent testimonials, publications, etc. should reach the Registrar, Lucknow University, Lucknow by October 12 1978. Candidates who are in service, should send their applications through proper channel. Application forms to outstations, will be issued upto October 1, 1978.

B.N. Singh
REGISTRAR

THE UNIVERSITY OF KASHMIR, SRINAGAR

Notice

I. Applications in the prescribed form are invited for the post of Director in the pay scale of Rs. 1500-60-1800-100-2000-125/2-2500 plus Dearness Allowance and Additional Dearness Allowance as admissible under rules for the Centre of Central Asian Studies, established in the University to undertake educational and research programmes relating to the area so as to explore cultural, linguistic, historical, social and Economic aspects of the entire region. These applications should reach the undersigned by 15-10-1978.

II. Qualification

(a) An eminent scholar with published work of high quality, actively engaged in research. Ten years' experience of teaching and/or research. Experience of guiding research at doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

(b) Evidence of research and other scholarly work relevant to the scope of activities of the Centre.

III. The prescribed application forms can be had from the Registrar, University of Kashmir, Hazratbal, Srinagar-190006 on payment of Rs. 6 in cash or by sending a crossed Postal Order drawn in favour of the Registrar, cashable at Srinagar Post Office alongwith a self addressed envelope (5" x 11") with the necessary postage stamps.

While making a request for the application forms, the candidate is advised in his own interest to send his detailed curriculum vitae.

Saif-ud-Din Soz
REGISTRAR

AMERICAN STUDIES RESEARCH CENTRE

Hyderabad-500007

Senior-Scholar-in-Residence

The ASRC invites applications from outstanding scholars in American Studies (literature, history, political science, economics, geography, sociology and philosophy) for fellowships of one or two months. We are looking for scholars generally of not more than 50 years of age, who have viable and significant research/writing projects.

The selected Scholars-in-Residence are also expected to advise and guide younger scholars working at the ASRC on their research and study projects.

Selected scholars will receive a fellowship of Rs. 1800.00 per month and roundtrip first class train fare between his/her home and Hyderabad. On its own initiative the ASRC may also invite scholars to serve as Scholars-in-Residence. Applications giving full details of educational background, academic experience and research/writing proposal should reach the Director, ASRC not later than 15th November.

JAWAHARLAL NEHRU UNIVERSITY, NEW DELHI

Advertisement No. Admn-III/4/1978

APPLICATIONS are invited (on prescribed forms) from the Indian Nationals for the post of (1) Senior Assistant (Caterer); (2) Steno-typists; (3) Assistant; (4) Head Electrician; (5) Store Assistant; (6) Telephone Operators (Junior Assistant-cum-typists to work in the Telephone Exchange); (7) Junior Assistant-cum-Typists; and (8) Telephone Attendant.

Scales of Pay

Rs. 425-15-500-EB-15-560-20-700 for post No. 1; Rs. 330-10-380-EB-12-500-EB-15-560 for posts No. 2, 3 and 4; Rs. 260-6-290-BB-6-326-8-366-EB-8-390-10-400 for the remaining posts.

Reservations

For posts No. 1, 3, 4, 5, 6 and 8, 15% and 7½% of posts are reserved for SC/ST candidates respectively. For posts No. 2 & 7, some posts are exclusively reserved for SC/ST candidates. 10% posts are reserved for Ex-Servicemen and 10% posts for physically handicapped persons.

Application Forms together with details of qualifications, age, experience etc. laid down for the posts, obtainable either personally from the office of Deputy Registrar (Admn.), Jawaharlal Nehru University, Room No. 101, Old Life Sciences Building (NAA Campus), New Delhi-110067 or by sending a self addressed and STAMPED envelope of the size 10 x 23 cms. must reach this office not later than 21st October, 1978.

AMERICAN STUDIES RESEARCH CENTRE

Hyderabad-500007

Requires

ASSISTANT LIBRARIAN

Grade

Rs. 1100-50-1600 plus the usual allowances.

Duties

Oversees a large library specializing in Americana under supervision of the Librarian; directly administers the periodicals section; serves as Acting Librarian in the Librarian's absence.

Qualifications

Minimum of Master's degree in Library Science; preferably additional Master's degree in the humanities or social sciences with interest in the United States; fluency in English and ability to write and correspond in English essential.

Experience

Five Years' experience in an academic or comparable library or as a teacher of library science, including two years' experience in a supervisory or other responsible position.

This is a one-year temporary position. There is, however, a good possibility that the position may be made permanent. Applications on plain paper along with a copy of a recent photograph should reach the Director, American Studies Research Centre, Hyderabad-500007, before 4 November 1978.

Candidates called for interview will be paid first class round trip train fare.

SOUTH GUJARAT UNIVERSITY

University Campus,
Udhna-Magdalla Road,
Post Box No. 49
Surat-395007

Applications are invited in the prescribed form (in eight copies) for the following teaching posts in the Post-Graduate Departments of the University:

Sr.No., Name of the Department and the Number of Posts.

(i) Business & Industrial Management

- (i) One Professor
- (ii) One Reader
- (iii) Three Lecturers

Professor-Reader are required in the following specialized areas:

(1) Organizational Behaviour and Personnel Management.

(2) Marketing Management
Lecturers are required in the following areas:

- (1) One in Financial Management and
- (2) Two in Organizational Behaviour and Personnel Management

(2) Economics

- (i) One Reader (Econometrics)
- (ii) Two Lecturers

(3) Sociology

One Lecturer

(4) Public Administration

One Reader

Candidates with demonstrated interest in Tools and Techniques of Administrative Improvement PPB, OR, PERT, CPM etc./Urban Government/Social Administration will be preferred.

(5) English

Two Lecturers

- (1) One having specialization in English/American Literature.
- (2) One having some knowledge of language laboratory techniques.

(6) Statistics

- (i) One Reader
- (ii) One Lecturer

(7) Education

One Lecturer
Qualified in Educational Technology.

(8) Physics

One Reader
One Lecturer
Both qualified in Nuclear and/or Particle Physics (Theoretical)

(9) Chemistry

One Reader
Qualified in Theoretical Chemistry.

Pay Scales are as under

(i) Professor: Rs. 1500-60-1800-100-2000-125/2-2500

(2) Reader: Rs. 1200-50-1300-60-1600-Assessment-60-1900

(3) Lecturer: Rs. 700-40-1100-50-1300-Assessment-50-1600

In addition to pay the teachers of the University Departments are entitled to draw dearness allowance, house rent allowance and other benefits like contributory provident fund and gratuity as may be decided from time to time.

Information about the qualifications prescribed for each post and application forms prescribed for each post can be had from the undersigned on payment of Rs. 7-00 in cash or by Postal Order alongwith self addressed envelope of 23 cm x 13 cm size duly stamped with Re. 0-50 ps. The last date for the application is 30-10-1978.

G.A. Desai
REGISTRAR

GURU NANAK DEV UNIVERSITY, AMRITSAR

Advertisement No. 20/78.

Applications are invited for the following posts on prescribed form obtainable (free of cost) from office of the Registrar, Guru Nanak Dev University, Amritsar by making written request accompanied by self-addressed stamped envelope of 23 x 10 cms. so as to reach this office by 16.10.1978 alongwith crossed Indian Postal Order(s) for Rs. 7.50 drawn in favour of Registrar, Guru Nanak Dev University, Amritsar. Applications fee is not refundable.

Note: persons already in employment must send their applications through their employers.

1. Dean, College Development Council (Rs. 2500/-p.m. fixed).
2. Security Officer (Rs. 400-40-800/50-950).

Qualifications

For post at Sr. No. 1.

Essential

(i) At least Second Class Master's degree. (ii) A minimum of ten years experience as a Principal out of which five years experience must be of a post-graduate college, and experience of having worked on various University bodies.

Desirable

(i) Sufficient experience of utilizing development and other University grants available to the colleges for under-graduate as well as post-graduate

studies during the 4th and 5th five years plans. (ii) Rich experience of guiding, supervising and controlling extra-curricular activities, such as NSS, NCC, Sports, Cultural and other Youth Welfare activities etc. (iii) Intimate knowledge of managerial, financial and administrative problems of colleges and of relationship between affiliated colleges and an affiliating University.

For post at Sr. No. 2.

(i) Retired Army Officer with the minimum rank of Captain or above or retired Police Officer with the rank of DSP or above. Only Officer with excellent record of service and administration shall be considered. Really competent persons can be considered for a higher start. (ii) Qualifications and experience are relaxable in the case of candidates otherwise found suitable by the Selection committee.

Mohinder Singh Randhawa
REGISTRAR

THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA

Notification No. 5

Applications are invited for the following posts in the Faculty of Technology and Engineering in the prescribed forms which will be available alongwith the details of qualifications and specialization from the undersigned on pre-payment of Rs. 2.00 (Rs. 0.50 for members of Scheduled Caste/Scheduled Tribes) by crossed Indian Postal Order payable to Registrar, M.S. University of Baroda and a self-addressed envelope of 30 x 12 cms. for each post.

Lecturers in

(1) Civil Engineer—4 posts, (2) Electrical Engineering—6 posts, (3) Mechanical Engineering—6 posts (4) Chemical Engineering—3 posts (5) Textile Engineering—3 posts (6) Textile Chemistry—1 post (7) Architecture—4 posts (8) Pharmaceuticals—1 post (9) Metallurgical Engineering—1 post.

Scale

Rs. 700-40-1100-50-1300-Assessment-50-1600.

The posts carry D.A., H.R.A., C.L.A., P.F. and Gratuity benefits as per rules.

Even though no individual post is declared as reserved the reservation of the posts, for different categories is as under:

SC—2

ST—4

Baxi Panch—1

Application forms will be available upto 23-10-1978 and requests received thereafter will not be entertained.

The application accompanied by a Crossed Indian Postal Order payable to the Registrar, M.S. University, Baroda worth Rs. 8.00 (2.00 for members of Scheduled Castes/Scheduled Tribes candidates) should reach on or before

31.10.1978. The candidates if called for interview will have to come at their own expense.

K.A. Amin
REGISTRAR

PANJAB UNIVERSITY CHANDIGARH

Corrigendum

Reference our advertisement No 24/78 published on 15th September, 1978 it may be noted that the qualifications mentioned must be in the field of Chemical Engineering in the specialisations mentioned.

ALIGARH MUSLIM UNIVERSITY

Advertisement No. 20/78-79

Applications, on the prescribed form, are invited for the following posts:

Candidates must possess Medical Qualifications, included in Ist or 2nd schedule or part II of the 3rd Schedule (other than licentiate qualifications) of the Indian Medical Council Act, 1956. Holders of Educational qualifications included in Part II of 3rd schedule should fulfil the conditions stipulated in Section 13(3) of the Indian Medical Council Act, 1956. Must possess a basic University or equivalent qualification entered in Schedules under State/Central Medical Registration Act. For the posts at Sl.No. 1 to 3.

1. Professor of Anaesthesiology, Scale Rs. 1500-60-1800-100-2000-125/2-2500 plus allowances.

Qualifications

M.D. (Anaesthesiology)

M.S. (Anaesthesiology)

Speciality Board of Anaesthesiology (USA)

F.F.A.R.C.S. (By examination)

As Assistant Professor/Reader in Anaesthesiology for five years in a Medical College.

Desirable

1. Aptitude for research

2. Published papers

2. Reader in Microbiology (Mycology), Scale Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications

M.D. (Bacteriology)/M.D. (Microbiology)/M.D. (Bacteriology with Pathology)/M.D. Pathology & Bacteriology/M.Sc. (Bacteriology)/M.Sc. (Microbiology) / Ph.D. (Bacteriology)/Ph.D. (Microbiology)/D.Sc. (Bacteriology)/D.Sc. (Microbiology)

As Assistant Professor/Lecturer in Bacteriology for three years in a Medical College.

Desirable

Published work in Mycology.

3. Lecturer in Microbiology (Immunology), Scale Rs. 700-40-1100-50-1600 plus allowances.

Qualifications

M.D. (Bacteriology)/M.D. (Microbiology)/M.D. (Bacteriology with Pathology)/M.D. (Pathology & Bacteriology)/

M.Sc. (Bacteriology)/M.Sc. (Microbiology) / Ph.D. (Bacteriology) / Ph.D. (Microbiology)/D.Sc. (Bacteriology)/D.Sc. (Microbiology).

The requisite recognised Postgraduate qualification in the subject and three years teaching experience as Tutor/Demonstrator in Bacteriology/Clinical Pathologist/Resident Pathologist of which one year should be after postgraduate qualification. Experience in Immunology.

Desirable

Published work in Immunology.

4. Reader in Law (Temporary but likely to become permanent), Scale Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications

(a) A first or a high second class Master's Degree in the subject concerned of an Indian University or an equivalent foreign qualification; (b) A research degree of a Doctorate standard or published work of a high standard; and (c) At least five years experience of teaching postgraduate classes and some experience of guiding research.

5. Lecturers in Law (3 posts—temporary but likely to become permanent), Scale Rs. 700-40-1100-50-1600 plus allowances.

Qualifications

Consistently good academic record with Ist or High 2nd Class (B in the seven point scale) Master's Degree in Law or an equivalent Degree of a foreign University.

Desirable

Experience of teaching and research and/or experience at the Bar.

Prescribed application forms and instructions may be had from the Deputy Registrar (Executive) either personally or by sending a self-addressed envelope of 23 x 10 cm. Last date for receipt of applications is 12th October 1978. Incomplete applications and those received late may not be considered.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T.A. equal to one single Second Class Railway fare only.

Jamalur Rahman
REGISTRAR

It pays
to
Advertise
in
University News

UNIVERSITY OF HYDERABAD

Advertisement No. Estt./3/78

Applications on the prescribed form are invited for the posts of Professors and Readers in Physics, Professor of Hindi and Reader & Lecturer in English in the University.

Scales of Pay

1. Professor: Rs. 1500-60-1800-100-2000-125/2-2500.

2. Reader: Rs. 1200-50-1300-60-1900.

3. Lecturer: Rs. 700-40-1100-50-1600.

Approximate emoluments at the minimum of the scale for Professor: Rs. 2280/-; Reader: Rs. 1932/- and Lecturer: Rs. 1268/-.

QUALIFICATIONS AND EXPERIENCE

Professor

A first of high second class Master's degree in the subject concerned and consistently good academic career; a Doctorate degree and considerable published work of high standard; ten years Post-graduate teaching experience and experience of guiding research work.

Reader

A first or high second class Master's degree in the subject concerned; A Doctorate degree and published work of high standard; 5 years experience of teaching in Honours/ Post-graduate class or Post-doctoral research.

Lecturer

(i) A Doctorate degree or research work of equally high standard and (ii) Consistently good academic record with first or high second class (B in the seven point scale) Master's degree in the relevant subject or an equivalent degree of a foreign University.

The Selection Committee may recommend relaxation of any of the qualifications at (i) and (ii) above subject to certain conditions provided a candidate has done research work for at least two years or has practical experience in a research laboratory/organisation or has published work of high standard.

Broad areas of research and specialisation

1. School of Physics

Two Professors and Six Readers. Solid State Physics; Quantum and non-Linear Optics; Laser Spectroscopy; Surface Physics; Material Science; Plasma and Astrophysics; Nuclear Physics.

2. School of Humanities

(a) Department of Hindi: One Professor. Hindi Language & Literature/Comparative Study/Bhakti Movement & Bhakti Literature/Dakhini Language & Literature.

(b) Department of English: One Reader & One Lecturer in English Literature.

General

For the post of Lecturer, preference will be given to Scheduled Castes and Scheduled Tribes candidates who are considered fit.

In addition to salary, the posts carry allowances as per University rules which at present are equivalent to those admissible to Central Government employees stationed in Hyderabad. Retirement benefits as per University rules.

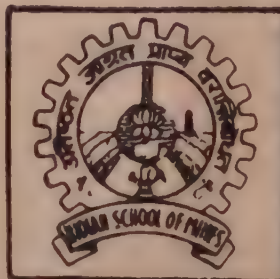
Prescribed application forms are available from the Assistant Registrar (Administration) on request accompanied by a self-addressed stamped (55 paise) envelope. Applications with the requisite fee of Rs. 7-50 (non-refundable) in the form of crossed Postal Order drawn in favour of the Finance Officer and other documents/certificates/publications should reach the Registrar, University of Hyderabad, 'Golden Threshold', Nampally Station Road, Hyderabad 500 001 on or before 23-10-1978.

Candidates called for interview from outstations will be paid contribution equivalent to return single second class railway fare towards their journey expenses. Candidates already in service

should submit their applications through proper channel. Applications received after the last date or without complete information or without the requisite application fee may not be entertained.

It will be open to the University to consider the names of suitable candidates who may not have applied. Relaxation of any of the qualifications, experience, etc. may be made in exceptional cases in respect of all posts on the recommendation of the Selection Committee. Canvassing in any form for or on behalf of any candidate will disqualify such candidature.

P.V. George
REGISTRAR



Indian school of Mines

Dhanbad-826004

No. 217851

NOTICE

Dated: 2.9.1978

The Indian School of Mines will conduct an examination according to the syllabi prescribed by the Board of Mining Examination under the Mines Act (for the grant of First Class Mine Manager's Certificate of Competency) in the following four BME papers:

IA—Methods of Working (Coal)	5.12.78	from (9 a.m.)
IIA—Methods of Working (Metal)	-do-	(2 p.m.)
IB—Mine Management, Legislation and General Safety (Coal)	7.12.78	(9 a.m.)
IIB—Mine Management, Legislation and General Safety (Metal)	-do-	(2 p.m.)
Viva-voce (IA & IIA)—Methods of Working (Coal & Metal)	8.12.78	(8 a.m.)
Viva-voce (IB & IIB)—Mine Management, Legislation and General Safety (Coal & Metalliferous)	-do-	(8 a.m.)

The Academic Council of the School has decided to permit its own graduates (and AISM diploma-holders) in Mining/Mining Engg. to appear at the said examination. ISM alumni wishing to avail of this facility may send their application in the prescribed form, duly completed, alongwith a fee of Rs. 100/- so as to reach the Registrar, Indian School of Mines, Dhanbad-826004, by November 15, 1978. Applications received after the said date will not be entertained.

Candidates who have not passed the Gas-Testing examination under the Mines Act, will not be eligible to appear in the above examination. A Gas-Testing examination will be held at 8.00 a.m. on December 4, 1978 at the School for candidates who have not passed the Gas-Testing examination. Candidates wishing to appear in the Gas-Testing examination should send their application on plain paper by November 15, 1978 to the undersigned alongwith one passport size photograph and a Postal Order for Rs. 5/- as fee for the examination, payable to the undersigned.

The prescribed application form and a copy of the syllabus for the BME papers can be obtained from the Registrar, Indian School of Mines, Dhanbad-826004, on sending a self-addressed and stamped envelope.

S.P. VARMA
REGISTRAR

A.I.U. PUBLICATIONS

	Rs.
1. Universities Handbook—1977	140.00
2. Handbook of Medical Education—1978	10.00
3. Association of Indian Universities—History	50.00
4. Higher Education and Development	30.00
5. University Finance—A Statistical Profile	50.00
6. Enrolment in Higher Education—A trend analysis	20.00
7. Handbook of Rules & Regulations for Inter-University Tournaments	7.50

Bibliography of Doctoral Dissertations (1857-1970)

8. Social Sciences	50.00
9. Humanities	100.00
10. Physical Sciences	125.00
11. Biological Sciences	100.00
<i>Note : Also available in paperbacks in individual discipline</i>	
12. Social Sciences & Humanities—1975-76	50.00
13. Natural & Applied Sciences—1975-76	90.00

Research in Progress

14. Social Sciences	32.00
15. Humanities	50.00
16. Physical Sciences	40.00
17. Biological Sciences	35.00

On Examinations

18. Towards Better Questions	5.00
19. Monograph on Grading	5.00
20. Monograph on Question Banking	5.00
21. Monograph on Internal Assessment	6.00
22. Monograph on Test & Item Analysis	10.00
23. Monograph on Question Banking in English Language & Literature	6.00
24. Management of Examinations	35.00
25. Monograph on Practical Examinations	In Press
26. Research Abstracts—Part I, II & III	

Question Bank Book Series

27. Mathematics	35.00
28. Physics	20.00
29. Chemistry	30.00
30. Zoology	25.00
31. Botany	20.00
32. History	15.00
33. Geography	15.00
34. Psychology	25.00
35. Economics	25.00
36. Commerce	25.00
37. Political Science	22.00

Address enquiries to:

Association of Indian Universities
Rouse Avenue, New Delhi-110002

18
10/11/78



Now for only Rs. 365 more, our Excursion Fare to America has a good deal more going: one stopover either way!

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AIR-INDIA
Something good going for you.

On your way to America, drop in on Europe.

University News

A CHRONICLE OF HIGHER EDUCATION & RESEARCH OCTOBER 15, 1978 80 PAISE



President Shri N. Sanjeeva Reddy inaugurated the Perarignar Anna University of Technology in Madras. Tamil Nadu Governor Mr. Prabhudas Patwari, Chief Minister Mr. M. G. Ramachandran, Vice-Chancellor of the University Dr. P. Sivalingam and Education Secretary Mr. C.G. Rangabashyam are also seen with the President.

INDIAN INSTITUTE OF TECHNOLOGY, DELHI

Hauz Khas, New Delhi-110029
Advertisement No. 9/78

Applications are invited for appointment to various academic and other positions in the Institute :

1. COMPUTER CENTRE

IIT Delhi is acquiring a large ICL-2960 computing system which is expected to be operational by Nov-Dec. 1978. The following positions are available in the Centre:

(a) Assistant Professor

Scale Rs. 1200-50-1300-60-1900.

Qualifications

Good Master's Degree/Doctorate in Computer Science/Engg./Maths/Applied Sciences with minimum 5 years' experience in teaching research in institution of university standard. The experience must include research/industrial experience of not less than 2 years. Specialised knowledge in one or more of the following specified field/subject with outstanding teaching/research experience and doctorate degree or published work of equal standard would be preferred.

Field

System simulation; Compiling techniques; computer architecture; Computer aided design; Computability; Theory of Programming Languages; Operating systems; Computer graphics; Switching and automata theory; Numerical Analysis and Operation Research.

(b) System Programmer

Scale Rs. 1200-50-1300-60-1900.

Qualifications

Master's degree in Engineering with at least 3 years experience or Master's degree in Mathematics/Applied Sciences/Bachelor's degree in Engineering with at least 5 years experience with specialisation in Computer Science/System Programming either with work on a large system or as part of research work towards doctorate degree. Good knowledge of software engineering essential. Research and Development experience in current topics of Computer Science desirable.

(c) Senior Programmer

Scale Rs. 700-40-900-EB-40-1100-50-1300.

Qualifications

Master's degree in Engineering with at least one year experience or Master's degree in Mathematics/Applied Sciences or Bachelor's degree in Engineering with at least 3 years experience with specialisation in Computer Science/Application Programming/System Programming. Experience could be relaxed for candidate possessing outstanding academic records.

(d) System Operator

Scale Rs. 700-40-900-EB-40-1100-40-1300.

Qualifications

Master's degree in Engineering with at least one year experience or Master's degree in Mathematics/Applied Sciences or Bachelor's degree in Engineering with at least 3 years experience of com-

puter operation and also possess knowledge of higher level languages. Experience could be relaxed for candidates possessing outstanding academic records.

(e) Junior Programmer

Scale Rs. 650-30-740-35-880-EB-40-960.

Qualifications

Master's degree in Engineering with Computer Software specialisation or Master's degree in Mathematics/Applied Sciences or Bachelor's degree in Engineering with at least 2 years experience in Application/System Software. Good knowledge of Programming essential. Experience could be relaxed for candidates having very good academic records.

2. MATHEMATICS DEPARTMENT

(a) Assistant Professor

Scale Rs. 1200-50-1300-60-1900.

Qualifications

Good Master's Degree/Doctorate Degree in appropriate field with minimum 5 years experience in teaching/research in Institution of university standard. The experience must include research/industrial experience of not less than 2 years. Specialised knowledge in one or more specified field/subject with outstanding teaching/research and Doctorate Degree or published work of equal standard would be preferred.

(b) Lecturer

Scale Rs. 700-40-1100-50-1600.

Qualifications

Good Master's Degree in appropriate field with 2 year's research/industrial experience in any Institution of University standard/Establishment of repute. Doctorate Degree or published work of equal standard preferred.

Field of Specialisation for Asstt. Prof. & Lecturer

(1) Numerical Analysis and Computer Science (2) Statistics and Operational Research (3) Applied Mathematics (4) Pure Mathematics.

3. PUBLIC RELATIONS OFFICER

Scale Rs. 1100-50-1600.

Qualifications

Essential

A Master's degree preferably in English Literature, a degree or post-graduate diploma in journalism or mass communication; excellent command of both spoken and written English; pleasant personality and proven organising abilities.

Desirable

A Bachelor's degree in science/engineering with degree or diploma in Public Relations.

Experience

Essential

10 year's experience in editing and production of literature both technical and non-technical; Press relations; organising conferences/seminars/symposia, etc., employee, community and campus relations; advertising and publicity.

Desirable

Some experience in a daily newspaper or periodical of repute, Public Rela-

tions Department of public/private sector, undertaking or a university.

The candidate selected as Public Relations Officer is supposed to undertake the following work:

(a) To make arrangement for visits of important visitors;

(b) To assist in organising seminars and symposiums;

(c) To look after all publications (technical and non-technical) of the Institute including their editing and press work.

Candidates selected would be offered position depending upon their academic background and relevant teaching/research/professional experience. Higher initial pay will be admissible to specially qualified and deserving candidates.

Posts are permanent unless otherwise indicated. Appointees will have option to elect any of two schemes viz. Contributory Provident Fund-cum Gratuity or General Provident Fund-Cum-Pension-cum-Gratuity operating at the Institute. The posts also carry allowances as per rules, which at present correspond to those admissible to Central Government employees. Age of retirement is 60 years. Candidates called for interview will be paid second class railway fare from the place of their duty to Delhi and back by the shortest route.

Indian candidates abroad, if selected for appointment, are allowed travel grant contribution limited upto a maximum of economy class airfare for self and family provided they undertake to serve the Institute for a period of 3 years, after joining.

Prescribed application forms may be obtained from the Supdt. (Recruitment Estt. I), Indian Institute of Technology, Hauz Khas, New Delhi-110029 either in person or by sending a self-addressed stamped envelope (10 x 23 cm. size) bearing postage stamp of 25p. Candidates from abroad may apply on plain paper giving an account of their academic and professional record, reprints and publications and names of at least two persons well acquainted with their professional work. Candidates selected for appointment will be required to join duty immediately or as soon as possible thereafter.

Reservation of posts exists for Scheduled Castes/Tribes candidates, as per Government of India rules, except for the excluded posts of Assistant Professor.

Last date of receipt of request for application form is 21-10-1978. Last date of receipt of completed application forms together with a crossed Indian Postal Order of the value of Rs. 7.50. (Rs. 1.87p for SC/ST candidates is 30-10-1978 (15-11-1978 for candidates from abroad).

Persons employed in Government/Semi Govt./Organisations/Autonomous Bodies should submit the applications through their employers.

UNIVERSITY NEWS

Vol. XVI
No. 20

OCTOBER 15
1978

*A Fortnightly Chronicle
of Higher Education* Price
80 Paise

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*Opinions expressed in the articles
and reviews are individual and do
not necessarily reflect the policies
of the Association*

Hony. Editor : ANJNI KUMAR

Assessing the English language teaching situation in India

R. C. Arya*

Everyone seriously interested in the problem would perhaps admit that the English Language Teaching (ELT) situation in the country today is not very encouraging. The results are nowhere commensurate with the efforts and resources that are put in. Since English is taught as a compulsory subject at school in most States, and at university in some, a huge amount of human and material resources is expended every year in this industry. How grossly the resources are wasted does not often come to the knowledge of the tax payer, as the performance of the industry is never scrutinized by applying the cost effectiveness principle, and no balance sheet is ever made. To some it may seem objectionable to apply such crass commercial norms to an academic 'discipline' like ELT, but the fact remains that everything on which public money is spent is answerable for that, and its performance is accountable by whatever norms people more knowledgeable than me think fit. The state of affairs today unfortunately is so bad that even after having spent five to six years over English at school, most students can neither write a simple letter addressed to anyone for any purpose, or anything else for that matter, nor can read anything in English with much comprehension. It is doubtful whether their mastery of even the passive vocabulary goes much beyond 500 words in this long period. The writing ability never develops to an extent which may enable them to perform any writing task successfully in their life. Briefly speaking, it is doubtful whether five or six years of English at school develops their communicative competence in English at all. It compares very sadly with even a two year diploma in any foreign language, say, French, German or Russian, which enables many, with even four hours of teaching per week, to read, write and even speak to a certain degree with some degree of correctness. We should naturally expect much more efficiency and success in teaching English, which has the status of a second language in our country. However, I would not like to spend any more time lamenting this sad state of affairs, but would like to examine some of the causes of this, and suggest a remedy.

The causes are perhaps obvious and are highlighted from time to time at various ELT seminars and conferences. They are, briefly speaking, defective syllabuses, bad teaching materials, lack of teacher training, defective modes of testing and examination etc. One could perhaps add the teacher's

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inadequate knowledge of the subject. Unfortunately, the profession of teaching is so poorly paid, as far as school teachers are concerned, that it cannot always attract those who have sufficient proficiency in English, and have also an adequate knowledge of the structure of the language. The teachers are mostly recruited on the basis of their B.A. or M.A. degrees which are, unfortunately, quite deceptive these days. On account of a general fall in standards they are not in many cases reliable indicators of one's knowledge of the subject. That seems to be the reason why not relying too much on university degrees many employers prefer to administer a separate competence test before they even interview the candidates for a particular job. Unfortunately, this is not done while recruiting most teachers of English. Recruitment is mainly based on paper qualification and on a ten or fifteen minute interview, which, I think, is a grossly inadequate means to measure the ability of anyone in respect of either his language proficiency or teaching ability. This state of affairs continues unabated, and not many people seem to be worried about it. On the contrary, a plea is sometimes made that if selection is made too difficult for teachers of English by introducing a proficiency or aptitude test it won't be possible to find enough people to teach English as a compulsory subject at school, which is quite a stupendous task. It is a stupendous task with which we cannot probably cope. The question is whether we should do it on such a large scale when our resources are miserably inadequate for that. We should either limit the task according to our resources, or somehow expand the resources. We are doing neither; hence all this mess in ELT. What we are actually doing is freely relaxing our standards everywhere, in awarding degrees as well as in recruiting teachers of English.

It is sometimes thought that an additional training for a term or two could make up for the loss and provide the teachers the required proficiency in English, besides lots of other things related to ELT. In fact, no B. Ed training, or any training under any Diploma in the teaching of English anywhere in the world can fill up in a term or two the serious gaps that many teachers of English have in the knowledge of their subject. Most people don't realize this clearly, and expect training colleges and institutes to turn out competent teachers of English every year like the finished goods of an industry. They never bother to ask the question as to what will be the quality of goods if the raw materials fed into the industry are of a poor quality. The training colleges and institutes can by no means clear the rot that has accumulated over the years, nor can they fill up all the gaps that have been left. In fact the gaps have now assumed such a gigantic shape that any half-hearted attempt, say a course in the use of English for a term or so along with half a dozen other things, is bound to fail. At this point it is pertinent to ask the question as to whose responsibility it primarily is to impart an adequate proficiency in the use of English, and a proper knowledge of its structure. I think nobody will dispute the fact that it is mainly the responsibility of schools, colleges and

university departments of English. The language is taught there over a number of years, and if there are any gaps, they should undertake the responsibility to fill them up. They may do that at various successive stages of the course, or by holding special remedial courses at the end. Even special correspondence courses in the use of English could be thought of. Whatever may be the case, we will be badly mixing up things if we try to shift this responsibility to training colleges and institutes, and expect them to help the teachers of English with their English along with several other things. They probably cannot do that if they have to do whatever is exclusively their job seriously, namely, training in syllabus-designing, teaching methodology, materials production, testing and examination. What they can do in addition is only to impart a course in the structure of English the purpose of which would be to provide a knowledge of the grammar, phonetics and phonology of English, if the teachers do not already have that. Ideally, university courses in English, both undergraduate and postgraduate, should by and large include them so that even this part of the subject is not unnecessarily entrusted to training colleges and institutes which have a lot of other things to do. It is only after tasks and responsibilities are so properly divided, and the knowledge of the subject is squarely taken care of by schools, colleges and universities, that the training colleges and institutes can function effectively and carry out their training programmes more efficiently and economically.

At the Central Institute of English & Foreign Languages (CIEFL) Hyderabad it is sometimes said that a training programme meant for teachers of English should not be unnecessarily burdened with courses like those in Linguistics, English grammar & usage, written English, phonetics and phonology of English and spoken English. It is often argued that the main emphasis in a training programme of this kind should be on matters like syllabus designing, teaching methodology, materials production, testing etc. That is quite true. But it is easily forgotten while saying so that the Departments of Linguistics & Contemporary English, and of Phonetics & Spoken English, unfortunately, have to do things which are badly neglected today in most university English courses. Obviously, they are the essential parts of the subject whose knowledge a teacher of English ought to have. Could anybody dispute that?

Having pointed out some of the causes of the bad state of ELT above, let us now consider what can be done to improve the situation. Again the usual answer probably is: reform the existing syllabuses; produce suitable teaching materials; organize proper teacher training programmes; reform testing and examination procedures, so on and so forth. These are all familiar slogans, and are annually repeated whenever any ELT seminar or workshop is held. But the question to be asked is what has actually been achieved by these slogans? Has there been much progress in any field? It even now makes many people who are seriously involved in improving the situation unhappy to see that there has not been much impact

of these slogans, or seminars and workshops. Most of the syllabuses and teaching materials in the country are still poor, teaching techniques primitive, and tests and examinations barbarous in many respects. What have we really achieved? Training Institutes like CIEFL, ELTIs and Training Colleges have sometimes to face this highly embarrassing question. They try to answer the question by pointing out some small areas of achievement, and by and large console themselves by saying that even if there is not much visible improvement there is now a greater awareness of ELT problems in the country as a result of their efforts. Some sceptics wonder whether only this much could be done in so many years.

The main reason why more could not be done seems to me improper utilization of the resources. Unfortunately, the available resources have not been fully channellized towards the right kinds of goals. Even if the goals are clearly perceived and the nature of the problems properly identified, the efforts made in achieving the goals and solving the problems have been perfunctory and half-hearted. As a result, not much has been achieved. When one looks at the enormity of the problems that still lie unsolved one really feels bewildered. I don't think much can be achieved by organizing a few seminars and workshops piously every year. I do not know how many people even take them seriously. I think much more needs to be done and in a much more planned manner. Far more serious efforts, and on a war footing are needed to clear the Augean stables of ELT in the country, if one can ever hope to do that. These efforts have to be made in a concerted manner by all those bodies that are entrusted with the task of improving the ELT situation in the country.

One suggestion in this regard that I could submit in this short paper is that instead of assessing things by fits and starts and piecemeal at various seminars and conferences, a continuous survey of the ELT situation in the country should be organized. This should concern itself with the evaluation of everything related to ELT in the country, for instance, syllabuses, teaching materials, teaching methods, testing and examination procedures, training programmes, etc. This survey should continuously do its work and submit its reports from time to time to concerned bodies, say, secondary boards, universities etc. Its main function should be to review things, point out flaws, and suggest remedies. This exercise can considerably help secondary boards and universities to improve their ELT programmes. At present many, unfortunately, do not even know what is wrong with their syllabuses, teaching materials, examination procedures, etc. A clear picture of things that the proposed survey will present from time to time will go a long way to improve things, and a couple of years of work of this kind will achieve much more than we have achieved over several decades by means of random seminars and conferences.

Now some may regard this idea is a bit crazy and fanciful, as the proposed survey requires an enormous organization. Firstly it requires a strong and determined leadership, a leadership of the institutions which have the required expertise to do the

job efficiently. I think CIEFL along with various ELTIs and the expertise available at various universities could provide the required leadership for this. The cooperation of bodies like the British Council could always be sought and the assistance of foreign expertise, if needed, could also be had. The survey has to be organized properly in different States with the help of those who have sufficient training in ELT and have a clear understanding of the problems involved. If the available resources in the field of ELT are thus properly utilized, I am sure this kind of survey, can be made possible. Once it gets going it will open up numerous possibilities of improvement. After the problems have been clearly identified by the survey, solution to them could be suggested by the same team of experts. Thus we could ensure a much more systematic work in the field of ELT. Merely holding a few random seminars, workshops and conferences annually will lead us nowhere. Not much really comes out of them. As an instance, we may look at the seminars and conferences that were held in different parts of the country in connection with syllabus reform sometime back. Quite a number of them were held and many professors of English and other important people in the field of English studies from all over the country attended them at different places to discuss what reforms should be made in the existing syllabuses of English at the university level. A number of proposals were made and scrutinized, and some recommendations were finally made. And there probably ended the ritual. How much follow-up is there; that is to say, how many syllabuses of English in the country have been reformed in the light of those recommendations, is an embarrassing question which one rarely asks. Even the University Grants Commission that spent large sums over these seminars and conferences does not, I suppose, ask that question, perhaps because it is engaged in several other important matters. This is not the fate of only one set of recommendations, but many other recommendations made by various other conferences regarding matters related to ELT probably meet with the same fate on account of lack of follow-up. If a continuous survey of the kind proposed is organized it will come to better grips with the problems. It will continuously pursue them, and try to find solution to them by all possible means. It will also maintain a proper account of what has been achieved, and what is still to be achieved. Resources will then not be wasted in random attempts having no proper coordination between them, and whatever seminars and conferences that are held as part of an overall plan suggested by the survey will surely produce better results.

However the problem of vested interests will still be there, as even if defects are pointed out and suggestions are made to change certain syllabuses, teaching materials, etc. people whose vested interests are served by hanging on to the old syllabuses, and textbooks will try to block all measures of reform, but that is a general social evil that has to be fought in any case.

In summary, let me now repeat the above points
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Needs and problems of university students living in 'Digs'

Surya Nath Singh*

Introduction: A university is primarily a place for teaching and research. These activities, however, do not remain confined to the classroom only. From this point of view the classes, the libraries, the laboratories, the hostels and the non-approved lodges i.e. 'digs' are all important. It has been observed that although the universities as well as the State have taken measures for the improvement of the living conditions of students inside the campus; they have not taken any interest in the living conditions of the students who do not reside in the hostels and are in the non-approved lodges or 'digs'.

A large number of students in any university who do not get accommodation in hostels and approved lodges make private arrangements for the same in unapproved lodges situated in slum areas or in disreputable areas. The condition in these lodges are horrible. The students who cannot afford to join hostels have to live in such places as they have no alternative.

As back as 1917, the Sadler Commission took note of this situation and recommended that the practice be stopped. The University Education Commission (1948) and the Indian Education Commission (1966) also expressed their dissatisfaction about this and suggested that students should not be allowed to stay there as no good academic pursuits are possible in the Digs. Dr. Khusero (1970) made "A Survey of the Living and Working Conditions of Students of the University of Delhi". The students living in the 'Digs' were too a small fry to catch his attention. No systematic attempt has perhaps been made to study the needs, problems and aspirations of these students anywhere in India though some important studies have been made in the United States and Great Britain. Considering the importance of the problem and the vacuum in the field of research in this area, the present investigation was undertaken.

Statement of the problem : The present study reads as "A Survey of the Needs and Problems of University Students Living in "Digs". The key concepts used in this statement are operationally defined as follows:

(i) **University student** means here such students as are preparing for various examinations of the University as regular candidates.

(ii) **'Digs'** here is used for the unapproved lodges situated in slums built by profiteers where students coming from the poor classes find accommodation.

(iii) **Needs** refers to the bare necessities which these students want to be immediately fulfilled.

(iv) **Problems** here means the difficulties and actual hardships which are frequently experienced by these students.

Methodology of the investigation : The method followed in this investigation is normative survey as no other techniques was found to be suitable.

The Sample of the study : In all 1000 students were covered by this study. They all lived in 'Digs' which are situated in the vicinity of the Banaras Hindu University which is their 'alma mater'. Out of these students, 200 students belonged to the Faculty of Arts, 250 to the Faculty of Social Science, 150 to Science, 100 to Commerce, 50 to Law, 50 to Education, 50 to Oriental Learning, 25 to Fine Arts and 25 to Agriculture. No student from the Faculty of Medicine and technology was living in Digs. As far the family background is concerned, 400 students belonged to the agricultural families, 45 to petty service class, 125 to petty shopkeepers and traders, 100 to teaching class families, 150 to the landless labourers and 50 to other unspecified groups. 650 students came from the rural areas and the rest from small towns. As far their religious distribution is concerned, out of 1000 students, 950 (200 Brahmins, 300 Rajputs, 100 Vaishya, 200 backward castes, 50 Bhumi-hars and 100 Harijans) were Hindu and 50 were Muslims. No Christian, Sikh or Jainite was found to be living in Digs.

Delimitation: The survey was conducted during the session of 1976-77 during the months of April to July and it is confined to the students of the Banaras Hindu University.

The tools used : The present study used questionnaire and interview for the collection of data. The questionnaire was developed by the investigator and consisted of 80 closed items. The response was expressed in the form of 'yes', or 'no'. The questionnaire was divided into the following sections:

1. General Information—8
2. Family Background—6
3. Residential Conditions and Physical Facilities—9
4. Financial Problems—15
5. Academic Problems—10
6. Social Problems—12
7. General Problems—10
8. Professional Aspirations—10

Interview was also arranged for the collection of informations. It was unstructured and was conducted by the investigator himself for having a deeper understanding of the problem. After the interview was over the information was qualitatively recorded. All pre-

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cautions were taken for establishing rapport with the respondents and getting correct information.

Result of the investigation: The data obtained was tabulated and categorised into six broad divisions, the details of which are mentioned below:

Family background : The students living in the 'digs' generally come from the lower and lower middle class families. The students from the upper middle and the middle classes are conspicuous by their absence. The students from the higher castes form 55% of the digs dwellers. Perhaps they cannot afford the hostel expenses but they do not like to remain uneducated because education opens new avenues of employment in addition to the traditional occupations which are performed by their families. The majority comes from the agricultural families and has a rural base. There is no one among these students whose parent is a lawyer, doctor or engineer. The families of these students are educationally and culturally backward. About 70% of the parents are either illiterate or educated only upto the primary level. Only 5% have received education upto graduation. Almost all the students come from the poor families (70%) which have to support on an average 10 members within in income of Rs. 3000/- per annum. The locality and the people around the digs belong to the same groups from which these students come and for a few months there is no problem for them regarding adjustment to the new situation. The problems have, however, arisen because of the new education they are receiving and the students they are contacting. Some sort of inferiority complex has developed among these students and the result is compensatory activities of different varieties.

Residential conditions and physical facilities : The study reveals that the living conditions and physical facilities are far from satisfactory in the digs. The students are living in dark and unventilated rooms. About 60% rooms are not properly electrified and they use kerosene oil lamps. They have to go out for bath and latrine. Only 30% rooms have common latrines and bath rooms. The majority takes bath at wells which are in a bad shape and a few go to Ganges. They believe to be a holy act. For the drinking water, 50% depend on public watertaps and the rest have to draw water from the wells which are not in a hygienic condition. The students pay low rent and usually share it with their partners. Only 10% can afford single seated rooms. The majority (70%) cook their food either in common messes or in their rooms. They cook food only for two once meals. Their rooms are generally over crowded with guests. About 30% students have arranged for ordinary maid servants from the area to cook their meal but 60% clean their rooms and cooking utensils with their own hands. There is absolutely no provision for drainage and water-logging is a frequent phenomenon in these areas. The landlords who went to raise the rent off and on do not bother about physical facilities and most of the houses leak during the rainy season.

The financial conditions : The students living in the 'digs' have to face all kinds of financial hardships. The majority (70%) comes from the lower strata of society and has to manage their expenses

within Rs. 100/- p.m. which they receive from their parents though a few (27%) get food grains from their houses. There are (30%) students who support themselves wholly or partially by private tuition or part-time jobs. Their average income is Rs. 70/-. Due to financial difficulties the majority (60%) cannot think of milk, eggs and vegetables. They eat 'khicheri' or 'roti' and vegetables. However it is strange that these students spend less on books, reading materials and food in comparison to their expenses on clothes and cosmetics. The reason is their anxiety to appear smart.

Academic problems: The conditions for academic pursuits are totally absent in the digs. The libraries and the reading rooms are far away from these places. The Banaras Hindu University has organized a few 'study centres' but they are not sufficient to serve the purpose. Only 40% students are able to make use of them. The regular visitors to libraries and reading rooms are only 20%. They do not purchase newspapers and manage to read them from their neighbours. However film magazines and detective novels are purchased by (20%) and read by (30%) whatever they read through the mother tongue which is Hindi. The greatest disturbance to their academic pursuit is because of their neighbourhood. In a few areas one can frequently come across persons who have acquired notoriety for various crimes. Women of disrepute also live in these places. The local criminals frequently take shelter with these students during police raids. This is at time against their will but sometimes with their consent. The digs are the dens of crime and a few students have been infected. The students do not devote more than 2 hours per day to their studies as they have no time left. For books they depend on library or they purchase them jointly. Only 5% students had all the textbooks. Their average annual expenditure on books and stationery is Rs. 120/- which is insignificant. This money too is wasted on cheap notes. Their academic difficulties can be attributed to their poverty and the locality they live in.

The social life in the digs : The community around the digs consists of people who are educationally, culturally, economically and socially disadvantaged. A student is an eye sore to them. Use of dirty language and abuse are common in these areas. All sorts of offences including sex and murder are committed. All these have only negative influence as far their socialisation is concerned. About 10% students have formed undesirable habits through contact with their neighbours, 4% of them suffer from venereal diseases, and 5% have learnt gambling, stealing and other criminal activities. A few have started taking Bhang, Ganja and liquor. Smoking and Pan chewing with tobacco is common. About 10% students have developed cordial relationship with their neighbours and take part in their festivals and Kirtans. They also go to local temples and Akharas. Casteism and communalism have an appeal for 80% students. There is no proper arrangement for recreation and the main source is the opposite sex about which they pass obscene remarks and enjoy. These students are dissatisfied with their existence. However they are neither

rebellions nor do they believe in revolution. Divine dispensation and destiny seem to be their logic. In digs one finds the worst kind of cultural ambivalence. In certain respects these students are modern and in others they are traditional. They believe in religion, God, fate etc. The percentage of atheists and agnostics is less than 5. They want educated wives but prefer the Purda system also.

Needs and aspirations of students in digs : These students are depressed by their poverty and the level of their aspiration is very low. Unemployment, high prices, the unjust social system, disregard for merit, nepotism and the politics of approach have totally demoralised them. They are convinced that they have no future. Only 7% want to go back to agriculture, 3% aspire for higher jobs the rest feel that they are fortunate if they get some clerical posts with a salary of 400 per month. Fearful of insecurity, the majority prefers government service to jobs in the private sector even on a lesser salary. Only 20% want to prosecute higher studies the rest are willing to leave it today if they get jobs. As many as 98% see the spectre of insecurity and unemployment after their studies. They do not want jobs which require manual labour. They prefer a white collar job with less salary but not one which gives higher salary and requires manual labour. They do not want ultra modern wives as they cannot afford the expenditure. Academically, 90% do not expect for I class, they want a degree. The majority does not believe that the problem of poverty can be solved in the near future and about 60% fear that things are going to be worse as time passes.

Recommendations and implications : The findings of the study have implications for the state, local administration, social leaders and the university. They are given below:

The State : A socialist state like ours should not remain indifferent to the problems of these students and should ensure tolerably good conditions of life for them by giving them more financial assistance and book aid. It can appoint inspecting officers for such lodges and fix the amount of maximum rent and lay down the minimum requirements and facilities. Youth hostels to be available on cheap rent may also be built. It can ask the local administration to pay more attention to these matters.

The local administration : The local administration should start fair price shops, make sanitary arrangements, build bathrooms, latrines and urinals in these areas specially for students. The social welfare, cooperative and planning departments should pay more attention to development work in these neglected areas.

The University: The university should, where possible, acquire these lodges, open more reading rooms, set up study centres, appoint wardens and make proper security arrangements for these students. It should contact the landlords, realise rent from students and pay to them. All such lodges be approved and registered with the university. A proper register of residents should also be maintained. Attempts should be

made to build less expensive hostels and dormitories where students should be allowed to cook their meals. The cooperative messes should also be started and meals should be subsidised. It should make arrangement for games, sports and recreational activities and give them more scholarships, aids, books and where possible, part time jobs. The weaker students may be given extra coaching by starting Sunday classes. A special Dean of Student Welfare may also be appointed for the benefit of these students.

The Society: The Society in general should feel its obligation towards such students. The rich people, the charitable trusts and the philanthropists must do something for them and they can do it in a variety of ways. The cultural bodies may also organise their programmes in these areas. Special part time employment facilities should also be given to them. Voluntary organisations should recruit more volunteers from them to give them self confidence. The rich persons and the general public should extend invitation for dinner, etc. to such students.

In course of this investigation certain problems come to light which should further be probed. This study by itself is a preliminary one and must be repeated on a large scale. The relationship between the students and the residents of the slums, and the problems and needs of the slum dwellers should also be studied. A comparative study of the hostel life and life in the digs should also be made. The needs and problems of the day scholars living with their parents should also be investigated. □

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only to state them more precisely. Firstly, as far as the knowledge of the subject i.e. an adequate command of English, and a proper knowledge of its structure (including its grammar and phonology) is concerned, schools, colleges and universities where the language is taught over a number of years have the primary responsibility of imparting that knowledge. Even remedial programmes to fill up the gaps have to be organized by them, so that when it comes to training the teachers of English, training colleges and institutes may be able to concentrate on the various aspects of teacher training and other matters related to ELT. Secondly, a continuous survey of the ELT situation in the country should be organized in order to review the existing syllabuses testing and examination procedures at various stages and tell the concerned agencies, namely, various secondary boards, universities and even State education departments, clearly as to what the defects are and how they can be removed for bringing about substantial improvement in the ELT situation. I hope they are not proposals of an impossible kind. □

Technical qualification : gap between study and career

A. Ramakrishnan*

Many students in engineering colleges and polytechnics do not think about the world outside their institutions. Their energies are devoted to achieving goals of education. Rightly, wrongly or accidentally, a particular path in education has been taken by most of them, obviously not by their own making, but by circumstances. Reaching the stage of possessing the degree or diploma, they can pause a little to see what the outside world has in store for them.

The problems are many. About 30 per cent of the engineers and technicians passing out either pursue their academic career further or find a job to their liking with a possibility of average growth-rate. Another 30 per cent find a berth where they could just sustain themselves. The rest with the degree/diploma in their hands move from pillar to post to find themselves driven from post to the pillar. If 12 months are spent in this manner, their problems become acute because another stream of job-seekers enter their fold.

The problem of quality is perplexing. Industries feel that students coming out of technical institutions are not ready to be put on the job, but require to be 'shaped', formed and 'tailored' to suit the specific needs. The technical institutions strive to bridge the gap between the requirements of industry and the performance levels of the students. But the gap becomes wider; technology advances in spurts, progress in educational technology creeps. This everwidening gap is a challenge to education planners.

The question of time perspective is also equally problematic. The demand for human resources, equipped with specific technical skills is neither constant, nor follows any known pattern over a time horizon. In content it fluctuates. The knowledge expected of a maintenance engineer in an engineering and processing industry today is not what was required a few years ago. Similar is the case in the fields of hydraulics, pneumatics and electronics. It is equally true in almost all aspects of technology/management jobs.

Then there is the cost aspect. To update knowledge in relevant technology to keep up with advances in the field requires financial backing.

There should be alternatives either to reduce the magnitude of the problem or scale it down gradually to a stage where it can be tackled. Regarding the

number, it would be difficult to realistically prune, because the demand pattern fluctuates widely, especially in certain fields, with the result, 'to have a little more' pays in the long run and prevents the catastrophe of 'not having any'. If the economic growth-rate in the country as planned is achieved, the demand for these human resources can also touch realistic levels and thus 'utilisation' will be commensurate with the 'generation'.

Qualitative planning is very much in the hands of the education planners and the faculty members. A lot of work has been done in the realm of qualitative innovation in technical education. One such effort is the sandwich pattern. The curriculum development cells are active in many institutions. The staff members are oriented to modern concepts of learning and teaching. The day when the technical education content really matches the requirements of the industry is not far off.

Those at the threshold of entering their professional career will do well to pause and think 'where to go' and 'how to go'.

Another point is this: When a student passes out of the technical institution, he/she is called a civil engineer, mechanical engineer or an electrical engineer depending upon the field of study chosen by him or her. But the industry wants to see them as production engineer, design engineer, maintenance engineer, inspection engineer and so on. This division of application of engineering is rather new to the just-emerging engineers. They did not have a chance to test and verify what it is to be a production engineer or maintenance engineer or inspection engineer. It is here, the familiarisation with the industry plays an important part.

If an engineer has to make a choice as to which applied field of engineering will suit him, he would have a chance to make a mark. If this chance is denied to him, the decision on the appropriateness of the choice will not be a sound one. The Government of India has a scheme under the Apprentices (Amendment) Act 1973 where the emerging engineers/technicians are given a chance to get themselves familiarised with the industry and industrial life. This familiarisation helps the engineer to look at himself and find in which branch of applied engineering he will derive satisfaction. This incubation period is necessary to make him successful later. □

(Courtesy : The Hindu)

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Srinagar seminar on research and development

The three-day Indo-US seminar on 'Relationship of university research in science and technology to national development' was organised by the University of Kashmir in Srinagar. The seminar recommended that universities in India and USA should share each others' experiences in the various research fields. Serious efforts be made for identifying creative research talent on a national basis in both the countries. It was also necessary to improve the quality of university research which implied need for increased finances. It was therefore thought desirable that universities devoted a larger fraction of their effort to applied research particularly on regional basis and a number of incentives should be provided to aid this area. It was necessary to have improved

The seminar was organised by the University Grants Commission and inaugurated by its Chairman, Prof. Satish Chandra. The participants included among others Prof. B. Ramachandra Rao, Vice-Chairman of the University Grants Commission, Prof. A. R. Kidwai, Chairman of the Union Public Service Commission, Prof. Rais Ahmad, Vice-Chancellor of Kashmir University, Prof. R. C. Mehrotra, Vice-Chancellor, Delhi University, Prof. Raja Ramanna and Dr. S. Varadarajan.

BHU workshop on health and population education

The three-day workshop on health and population education organised by the Faculty of Education, Banaras Hindu University

try attained the required stage of economic development, as had happened in other industrialised countries.

Dr. Hari Narain, Vice-Chancellor of the university said in his presidential address that the workshop had been organised at an appropriate time. Most of the developing countries are facing the problem of population explosion and India was not an exception. He appreciated the role of faculty of education for taking up the leadership in this direction. He announced that the university has decided to institute a chair for rural development which will take care of population education in rural areas and other allied projects. He assured that the university will extend all possible assistance for disseminating the information on population education.

About forty experts and faculty members drawn from the various disciplines of Indian universities participated in the seminar. The workshop was organised by Dr. S. N. Singh, Dean, Faculty of Education of the university in cooperation with the University Grants Commission.

ISM organises special courses on petroleum

The Departments of Engineering, Mining Machinery and Petroleum Engineering of the Indian School of Mines organised a four-week course in oil-well drilling technology for a batch of Oil India engineers. Another course of eight-week duration in petroleum engineering was also organised recently by these departments for production executives of Oil and Natural Gas Commission and Oil India. The course on drilling technology is the first of its type offered at the Indian School of Mines. In addition to the expert guidance of ISM faculty, guest lecturers were delivered by the senior officers of Oil Industry and ONGS. Technical films on Oil Industry were screened and field visits were arranged to the industrial units and research laboratories.

ISM introduced from the current academic session a specialised course on drilling engineering leading to M. Tech. degree.

CAMPUS NEWS

management at university level and there should be greater freedom for research investigators to manage the reoriented research programmes.

The seminar recommended that interaction between university scientists and industry should be increased substantially. It suggested that courses relevant to industry may be introduced and industrial scientists be invited to serve as teachers for these courses.

Prof. F. A. Long of Cornell University and Prof. A. N. Bose, Vice-Chancellor of Jadavpur University, Co-Chairmen of the seminar felt that there were substantial differences in the activities of the universities in the two countries which faced different problems. The chairmen thought there were still many areas of common interest where it was possible to discuss and suggest ways in which universities in both the countries could contribute to national development.

called for a massive plan of action to create awareness, especially among the people in rural areas about the need to develop small family norms for improving quality of life and accelerating the transformation of society.

The workshop formulated a number of recommendations including appropriate revision of curriculum at the secondary stage. The suggestions included a proposal for upward revision in the marriage age and provision of incentives and disincentives for containing population explosion. It was emphasized that a comprehensive strategy covering formal and non-formal education should be worked out.

Shri H. N. Bahuguna, Union Petroleum Minister who inaugurated the workshop said the slogan of the time should be 'faster economic progress'. He maintained that population would be automatically brought within the manageable limit provided the coun-

Madurai to organise international symposium on solar energy

In order to consider the problems relating to present energy crises, fuel demand, food and feed requirements of the country and fertilizer shortages, Madurai University will organise an international symposium on biological application of solar energy during December 1978. It has become absolutely essential to concentrate and strengthen our efforts in studying the biological sciences which would be ultimately of great national relevance. The programme will include lectures and discussions on the following topics:

1. Biofuels and chemicals
2. Photosynthetic productivity
3. Nitrogen fixation and metabolism
4. Model systems and H₂ production

Several eminent biologists from all over the world are expected to draw a set of recommendations based on which an action plan programme for biological application of solar energy would be formulated. The projects are expected to be identified for implementation in the national laboratories.

A training course in biofuels, bioproductivity and photosynthesis will also be held at the university after the symposium. The course would provide practical instructions in biological methods applicable to laboratory and field studies for young scientists from the developing countries. The main areas to be covered during the course would be:

1. Field photosynthesis measurements
2. Plant photosynthetic characteristics
3. Carbon assimilation and metabolism
4. Nitrogen fixation and metabolism
5. Cell and Chloroplast reaction

6. Enzyme isolation and assay
7. Gas measurements

The symposium is sponsored by the Department of Science and Technology, University Grants Commission, Indian National Science Academy and Bhabha Atomic Research Centre.

Scientists desirous of participating in the international symposium or the training course may contact the Head of the School of Biological Sciences of Madurai University.

Osmania to conduct international course in exploration geophysics

The Centre for Exploration Geophysics of Osmania University will organise a twelve-week UNESCO sponsored regional training course on methods and techniques in exploration geophysics during November 1978.

The course is intended primarily for in-service personnel associated with geological exploration programme for mineral, ground water and oil exploration. It will be with a practical bias so that the trainees are able to carry out geophysical exploration programmes on their own. The first six weeks of the course will be devoted to lectures and laboratory work giving the basic theory, instrumentation and procedures for field operations and interpretation of data while the next four weeks will be spent in the field where candidates will carry out work employing various geophysical exploration techniques. The remaining two weeks will be devoted to training in processing and interpretation of geophysical data involving practical problems.

The subjects to be covered in the course will include: general introduction; gravity and magnetic methods; electrical and electromagnetic methods; seismic, radio-metric, well-logging and geo-

chemical methods; and geological interpretation of geophysical data.

Participants to the course have been invited from the region including Afghanistan, Bangladesh, Burma, Mongolia, Nepal, Pakistan and Sri Lanka.

Need for further research to promote literacy

The panel of experts on literacy from the eleven countries of Asia and Oceania met recently in New Delhi. The panel was of the new that a suitable mechanism should soon be developed to coordinate research and training activities. A national management information system would help in the collection of data and its processing besides preparation of inventories and other related information. The panel therefore recommended that at the regional level besides exchange of information and experiences in the field of research and training, financial help should also be provided to the member-countries.

The UNESCO sponsored meeting recommended that the regional countries should promote co-operative research on common issues in the field of literacy. These include community participation, adult learning, behaviour, planning, management and coordination techniques with special reference to literacy programmes.

The panel emphasised that countries of the region should depend on indigenous resources for promotion of literacy in their respective countries. International cooperation can be fruitful in some selected areas.

The meeting commended Indian commitments and programmes in the field of literacy. They noted the linkage visualised in these programmes between literacy and national development. The panel expressed the hope that Indian example would have an impact on the programmes of other developing countries of the region.

The participants felt that the experiences of some of the countries outside the region particularly the African and South American countries could be relevant to the needs of member-countries carrying out the literacy programmes.

Dr. Chunder addresses convocation at Indian Agricultural Statistics Research Institute

Today, more than ever, our country demands the attention of all, particularly those who are associated in some way or the other with the Government machinery, towards the basic needs of its population and removal of disparities in the economic conditions of people of different sections of the society. In the field of agriculture, the need of the hour is not only increased production but also more income and gainful employment to the weaker sections of the rural society. Intensive research for higher crop yield is being carried out at various institutes of I.C.A.R. and other similar centres in the country. Statistical methodology has an important role to play in the effective conduct of such researches. However, it is doubtful whether a large number of researchers engaged in this field are really aware of the basic needs of our brothers in the countryside. This is because most of the researches are conducted in well equipped laboratories with sophisticated instruments under controlled conditions. What happens in a farmer's field is something very different. It is only recently that we have recognised that the agricultural sciences and technology should be carried to the rural areas if the problems facing the rural front have at all to find any solutions. The rural people are to be actively involved in the development of agricultural technology so that the trend of people moving from rural to urban areas for better amenities of life is reversed. However, at the same time we all know that technological progress cannot be accelerated unless the basis sub-stratum of educational growth is taken care of. In other words, agricultural education has to be given its due importance as early as possible. To my mind, it appears that the basic aspects of agriculture must be included in the course curriculum at the very early level. Government is about to launch

a massive programme of adult education with a view to making 10 crores of adults literate in five years. The programme has basic agricultural education as one of its components to supplement literacy. In the revised system of formal education in schools, socially useful productive work will share a sizable part of school time. Agriculture will no doubt form an important item of work in this field in the rural schools. Such knowledge would make education oriented towards rural life and help particularly those who ultimately opt for agricultural field for research and development at the undergraduate and post-graduate levels. They should be aware of the rural problems as well as the background against which they have to direct their energies for achieving the triple objectives of increased production, more income and gainful employment. Their researches would then be more relevant to the needs of the country.

A new national policy on education is being evolved. It was recently discussed at the State Education Ministers' Conference held at New Delhi. I have been feeling that all the efforts to put the basic educational structure on a sound footing can only bear fruit if we stress on the moral aspect of life through education right from the elementary stage. Truth must be emphasised because without truth there can be no courage and vice-versa. To encourage the students, prizes should be given in school for truth, fearlessness and self-less service. The educational policy adopted at the school stage will have their impact on University education which must be similarly re-structured. Fortunately, in the context of agricultural education and research, the Review Committee on Agricultural Universities set-up by the I.C.A.R. have come out with a Report. There seems to be an urgent necessity of integration of teaching,

research and extension. Practical training and vocational experience should form an essential part of the post-graduate programmes. We should emphasise and encourage 'Earn-while-you-learn' schemes. Training of non-elite graduates with motivation of self-employment in agriculture should be taken up. Home Science education should be oriented to suit rural areas. It may be a good idea that there should be a system of annual awards for outstanding teachers in each faculty and each agricultural university should have an award for 'Teacher of the year'. In an Institute like yours where teaching is an important activity, introduction of such an award is perhaps all the more necessary.

I have learnt with satisfaction about the problem-oriented research completed by the Institute in the past and the role played by it in providing technological data needed for agricultural planning. Determination of yardsticks for various agricultural inputs, study of the responses to agricultural inputs like fertilizer, irrigation etc. by planning experiments at the experimental research stations as well as on the cultivators' field, determination of the essential components of feed requirements and their economics for increasing the livestock production etc. have been attempted by this Institute.

I understand that sampling and measurement techniques were developed for collection of various types of agricultural data with high quality at a minimum cost. I am also told that crop cutting survey techniques, sampling methods and estimation of cost of crops and livestock products, sampling techniques for determination of extent of incidence of pests and diseases and loss thereof are some examples of applied research in statistics which were conducted by the Institute. New experimental designs were developed and they were demonstrated at the agricultural research stations as well as on the cultivators' fields. All the new useful ideas and methods should be effectively brought to

the knowledge of our agriculturists so that they can make appropriate use of such knowledge for better production.

As you know, mathematical statisticians who teach in universities are expected, from time to time, to publish new mathematical contributions to their subjects and their competence tends to be judged by the number of theoretical papers that they produce, rather than their practical application. This creates a yawning gap between theoretical and practical statisticians. Secondly, it makes many of our ablest new recruits start their career without any clear idea of how to apply important and quite elementary statistical methods. Many of them become teachers in their turn and teach not only budding professional statisticians but also students in other disciplines who wish to acquire a working knowledge of the elementary parts of statistics. This last category viz. the students of other disciplines, are required to be trained so that they would be able to avoid elementary blunders, know when to consult a professional statistician and have enough command over the subject to be able to communicate with them intelligently.

Our Indian traditional universities produce a large number of Post-Graduates in statistics who are unable to find suitable employment, while at the same time Govt. agencies find it hard to recruit the right type of persons for various posts. The syllabi of the master's degree courses in various universities are oriented more towards pure mathematics and in some universities, in fact, statistics is still considered as a part of mathematics. It is perhaps necessary that the universities orient their training programmes so that they are able to meet the growing needs of the Government and public organisations.

In this context one cannot but appreciate the efforts of this Institute, for, here the training is a careful blend of theory and practice. The teaching of statistics in the universities also has to be made more practical oriented. There is a need for having more

and more active collaboration between the universities and research institutions, like this Institute, which specialise in problem-oriented research. In my opinion, such collaboration will help in a better development of the subject of statistics which is so vital for proper planning for economic development of the nation.

Plea for Dinkar chair in Patna Varsity

Dr. T. B. Mukherjee, Vice-Chancellor of Patna University in a recent meeting held in Patna to observe the 71st birth-day of late Dr. Ram Dhari Singh Dinkar pleaded for establishment of a chair in the university in memory of the late poet. The Vice-Chancellor said the late poet Dinkar ranked next to Rabindra Nath Tagore.

Mr. Jageshwar Mandal, State Minister for Cooperation, Dr. Devendra Prasad Singh, former

Vice-Chancellor of Bhagalpur University were among others who attended the meeting.

Essay contest for college students

National Foundation for Teachers Welfare has planned an open essay competition for the college students. Twenty-five prizes will be given for the essays to be adjudged by a committee of eminent educationists.

Themes for the competition are 'A teenager's dream of an ideal university'; Should education be job-oriented?; and 'My expectations of an ideal teacher.'

The essays may be written in English, Marathi, or Hindi and sent by October 23 to Mr. Chimanlal C. Sheth, Secretary, National Foundation for Teachers' Welfare, 71, Apollo Street, Bombay Samachar Marg, Bombay.

Adult Education programme formally launched

The National Adult Education Programme seeking to remove illiteracy of at least hundred million adults in the next five years was formally launched on Gandhi Jayanti Day.

The President, Shri N. Sanjeeva Reddy in his message appealed to the people to lend their help in coordinating national adult education programme. He said the programme had been planned for development of the country through investment in its people. It cannot be implemented merely by government efforts and every citizen must consider it his duty to contribute to the success of the programme.

The Vice-President, Shri B. D. Jatti inaugurated the programme and underlined the importance of education as an instrument for economic development. He stressed the need for adequate follow-up measures so that the neo-literates sustained their interest in learning. The young neo-literates should be allowed to go into regular courses of formal education and ample opportunities should be provided to them through correspondence courses, non-formal education and condensed courses. The Vice-President said that if the programme succeeded in its goal we would be creating for the first time a stir at the grass-roots level. He felt that the programme was of such dimension that it could not be implemented without the active cooperation and support of all the agencies concerned.

The Prime Minister said that the national development could be achieved only if everybody was educated. He felt that the pace of literacy could not be accelerated without dedication and active involvement of the whole society in the programme. The teachers should also be involved for the success of the efforts. He said literacy did not mean mere reading and writing which was only a groundwork for the goal of educating every person.

Dr. P. C. Chunder, Union Education Minister said that the programme would not be confined to the age group of 15-35 but would cover every illiterate adult.

Allahabad study on Harappan culture

The excavations and explorations conducted by the department of ancient history, culture and archaeology of the University of Allahabad, have found traces of the Harappan culture in the central Ganges valley, extending from Kaushambi on the river Yamuna to Kakoria on the Chandraprabha in the Chakia subdivision of Varanasi district.

Harappan elements have been identified in the lowest levels of Kaushambi on the Yamuna banks. The ancient sites of Anaur and Unchdih in Meja tehsil of Allahabad district have yielded ramparts which are a replica of the defences of Kashumbi. A large number of megaliths of cairn and cist type are still preserved at Kakoria. The site is a single-culture site and it appears to be the eastern most fringe of the late Harappan influence.

Prof. G. R. Sharma, Head of the Archaeology Department of the University who is guiding the excavations said, the chalcolithic culture of the Central Ganges valley from Kausambi to Kakoria is a composite culture showing the co-mingling of two chalcolithic cultural streams—one the late Harappan culture of the western area and the other, the more powerful constituent being the chalcolithic culture of the Vindhya. The discovery of Harappan pottery in the habitation sites as well as in the Megalithic tombs at Kakoria, is a landmark in Indian archaeology, providing a new perspective for the study of the Indian Megaliths.

NAEP promotion centre set up

A training programme has been evolved to familiarise the project functionaries with the characteristics of the National Adult Education Programme. It is proposed to organise the correspondence courses for the functionaries and instructors. A mechanism for continuing evaluation has been built in the project system to help identify the deficiencies

of the programme and to take corrective measures.

The machinery for preparation of curriculum, teaching and learning materials is to be gradually decentralised at the project and district levels. The district adult education officer and the project officer will be expected to create informal consortia of the available talent in the area as there is no separate staff for this purpose.

Fifteen states have so far set up resource centres for providing the necessary support to the programme. The resource development includes production of teaching and learning material, training, evaluation and providing guidance to the programme. Directorate of Adult Education of the Union Education Ministry will be at the apex of these resource structures.

Stress on role of Alumni

Prof. G. R. Damodaran, Vice-Chancellor of Madras University said in his inaugural remarks at the meeting of the University Management Alumni Association that the alumni had a vital role to play in improving the standards by offering suggestions, and by building up a library of case studies. He appreciated the role of part-time students and thought the academicians learnt from their experience. The teachers were a link between the part-time students and the other full timers.

Mr. M. V. Arunachalam, an industrialist in his keynote address said that there was not enough interaction between the practising managers and the academics. He pleaded for inter-transfer of faculty and the professional managers so that the faculty members could take up consultancy assignments and the managers could perform faculty jobs.

Prof. R. V. R. Sivagnanam, Head of the Department of Management Studies of the university said the alumni could serve as a potential part-time faculty and help the university interact with full-time students to channelise the young talent for placement. It could also set up consultancy service besides run-

ning a journal to locate the talent in the area of marketing, finance and general management.

Proposal for post-graduate teaching in regional language

The Vice-Chancellors of various universities in West Bengal in their recent meeting with the State Minister for Higher Education, Mr. Sambhu Ghosh, assured that efforts would be made to introduce teaching and writing of answer scripts in Bengali upto post-graduate level from the next session. The Minister said that the State Textbook Boards have requested the eminent academicians to write books in Bengali for all papers in political science for post-graduate examinations. Experts in the field of other subjects would also be encouraged to write books in Bengali. He said that research students could submit their theses in Bengali for award of doctorate degree. Arrangements would be made for translation of their papers in English whenever necessary.

The Minister announced that efforts would also be made to introduce teaching and writing answer books in Nepali at the post-graduate level in North Bengal University.

Punjabi Varsity to aid adult education project

The N.S.S. department of Punjabi University has prepared a plan for five hundred students including one hundred fifty women students drawn from the different affiliated colleges of the university to do the initial spade-work for the National Adult Education Programme during their ten-day camps to be held during autumn break. The work will include creation of necessary awareness among villagers for the adult education programme. The students will also be required to do manual labour for four hours daily mainly for reinforcing the earthwork along the village link roads which had been damaged during the recent floods. A campaign for complete attendance of children in village schools, collaboration with the health autho-

rities for immunisation of children and a campaign against social evils have also been included in the programme.

The university has decided that NSS units of over forty colleges affiliated to the university will be running the Adult Education programme in villages adopted by them separately.

Regional language favoured as instruction medium

Prof. G. R. Damodaran, Vice-Chancellor, Madras University, said in Coimbatore that qualitative improvement in education could take place if the regional languages were adopted as medium of instruction at all levels. The medium of instruction in higher education should also be the regional language and English should be learnt as a language only. He said teaching in regional language would help the students understand the subject in a better way.

The Vice-Chancellor denied that standard of university education had gone down. He pleaded that the universities which have autonomy to frame their professional courses should be allowed to adopt a similar line of action in the field of medical education as well.

Agra Varsity principals meet

Dr. R. K. Singh, former Vice-Chancellor of Himachal Pradesh University while opening the second annual conference of principals of colleges affiliated to Agra University stressed the need for improving educational standards. He said principals would play their legitimate role if they exerted themselves, asserted their authority and maintained absolute integrity. The principals must understand the relationship between the university and its colleges which have their own distinctive role to play. Dr. Singh observed that the university stood for the colleges which must perform their role in the national development.

The conference resolved itself into several groups which would submit their reports on admissions, examinations, statutes,

conditions of service of non-teaching staff and the financial role of principals.

PAU organises rural volunteers programme

Dr. Amrik Singh Cheema, Vice-Chancellor of the Punjab Agricultural University while addressing the assembly of Rural Youth Volunteers at the university campus commended their role in the uplift of rural people. He said that a new family of young farmers, devoted to the cause of farm progress through learning of advanced farm technology, sharing of knowledge and mutual help was coming into being. Dr. Cheema urged that each of the volunteers should train at least ten persons of his farm area so that the research findings of the university could reach the common farmer in the quickest possible time.

The Vice-Chancellor assured the volunteers of cooperation from the university authorities. He disclosed that requests for establishment of such farmers' organisations had been received by the university from other states as well.

Nagpur proposes revaluation of papers

Prof. W. M. Kalmegh, Vice-Chancellor of Nagpur University announced that a system of revaluation of answer papers will be introduced in the university from the next academic session. Applications for revaluation would have to be made within forty days of the declaration of the result. A fee of Rs. one hundred would be charged for each paper. The candidate would be required to give an undertaking that the revaluation would be binding on him if he got fewer marks than in the original valuations.

Delhi Varsity plan for adult education programme

The Delhi University has prepared an elaborate plan to participate in the National Adult Education Programme. A central committee has been formed under the chairmanship of the Vice-Chancellor of the university to

coordinate and render assistance to the colleges to implement their plans. The proposals include adoption of villages, resettlement colonies in slums, taking charge of at least fifty adult education centers, production of learning material, conducting training and research programmes and participation in the scientific evaluation of the programme. A large number of teachers and students have volunteered to participate in the programme. The NSS, NCC, NUS students will join together to make the programme a success.

JNU students adopt a village

The students of Jawaharlal Nehru University have adopted Ibrahimpuri village in the Alipur block in Delhi for rehabilitation and reconstruction. The village was badly damaged during the recent floods.

The students have been working regularly in this village and were the first to reach there and administer medical and other flood relief. The Commanding Officer of the Flood Relief Operations in the block has praised the students for their devotion to the task of helping the destitute and flood victims. He has also applauded their discipline for their efforts to help the flood victims in complete disregard to their personal safety.

The students have also collected Rs. seven thousand in cash which they propose to spend for the improvement of the village.

Commonwealth scholarships

The department of education of the Union Education Ministry has invited applications on the prescribed forms for award of commonwealth scholarships for higher studies/research in Canada, Jamaica, Malaysia, Trinidad and U.K. The scholarships are available in the field of engineering and technology, medicine, science, agriculture, humanities and social sciences. Employed first class master's degree holders below 34 years, who are sponsored by their employers are eligible for the award. The applications will be entertained by the Ministry in Shastri Bhawan, N. Delhi-110001. by October 25.

Osmania organises seminar on management in government

Mr. K.C. Abraham, Andhra Pradesh Governor and Chancellor of the state universities told the participants of the seminar on management in government held recently in Osmania University Campus that requirements of welfare state have given a new dimension to administration and laid down a new set of values and concepts. He expressed the hope that efficiency and integrity of young administrators would ultimately transform the aims and objectives of welfare into an action. It was a question of performing new roles by accepting responsibility and leadership, so that the administration could cater to the basic needs of community.

The Governor said studies on the present administrative set-up had shown that there were defects of over-devotion to precedent, lack of initiative and imagination and unwillingness to take responsibility or decisions. The administrators should evolve suitable alternatives to get over the deficiencies and supplement the system with new managerial techniques.

The seminar was organised by the Department of Public Administration of Osmania University in collaboration with southern state governments and the Department of Personnel and Administrative Reforms.

Bihar students collect books for library

The girls students and members of the teaching staff of the Samastipur Women College collected three thousand eight hundred books from all the sections of the community for the college library in a short period of six days. The students and the teachers also donated hundreds of books for the library. The college library which had fifteen hundred books in their shelves earlier has now five thousand three hundred books. Some of the collected books are rare volumes which have enriched the collection of the college library.

Maharashtra plans shorter medical courses

The Maharashtra State Health Minister, Dr. (Mrs.) Pramillabai Tople announced recently that the state government has decided to introduce post-matriculation three years' medical course from the next academic session. The nomenclature of the course is being finalised. The recipients of the diploma will be allowed to start the medical practice in towns and villages with a population of less than ten thousand. The Minister said it will be possible to start the course with a little capital expenditure.

IOA invites competitors for Asiad

The Indian Olympic Association has asked the sports federations and associations affiliated to it to submit the list of their competitors for the forthcoming Asiad to be held in Bangkok. Air Vice-Marshal C. L. Mehta, Secretary-General of the I.O.A. in a circular addressed to the federations has urged that a complete statement of cases be submitted to the Union Government quickly. The federations have also been asked to include the names of technical officials and delegates accompanying the contingents so that the arrangements could be finalised well in time.

Jadavpur students organise mountaineering expedition

The Jadavpur University mountaineering expedition which will attempt 20,100 feet Lion and 19,850 feet Sire peaks in the western Himalayas has established its advance base camp at about 14,500 feet. The expedition has so far not experienced rough weather and all the members are keeping fine. The team reached the base camp which is encircled by quite a few unnamed peaks after trekking for about 10 km. distance from Karchanala. The expedition has divided itself into two groups. One of the groups will attempt 20,100 feet lion and sire peaks and the other group will study geology, glaciology and metrology of the area.

Personal

1. Dr. Hargovind Singh has been appointed Vice-Chancellor of Magadh University.
2. Dr. Inayat Ahmad has been appointed Vice-Chancellor of Bihar University.
3. Dr. R.P. Bambah, Professor of Mathematics, Panjab University, has been awarded the prestigious Srinivasa Ramanujam Medal for 1979.

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Mathematics

1. Burra, Gautam Siddhartha. On some problems of bound states and scattering in quantum mechanics. University of Calcutta.
2. Das, Chakradhar. Mathematical programming in complex space. Sambalpur University.
3. Joshi, Prakash Chandra. On a generalised Laplace Laguerre transforms and distributions. Kumaun University.
4. Koteswara Rao, G. O-primitive and pseudo-integral domains. Nagarjuna University.
5. Mishra, Shantilata. Banach limits and infinite matrices. Sambalpur University.

Physics

1. Gandhi, V.H. Some problems in Terrestrial magnetism. Gujarat University.
2. Ghosh, Tapaskumar. Studies on decays and Production of new resonances. University of Calcutta.
3. Hoque, Fazlul Md. Dielectric studies in certain organic solid and solid solutions. Andhra University.
4. Kirtane, Sunanda M. Orbital effects in magnetic neutron scattering. Indian Institute of Technology. Kanpur.
5. Raychaudhry, Hiral. Strong interactions of the hyperons and the light hypernuclei. University of Calcutta.
6. Saha, Haripada. Ion—atom and electron—atom collisions. University of Calcutta.
7. Sarkar, Dipak Kumar. Design and development of a special vibration Galvanometer to study the effect of tension on torsion. University of Calcutta.
8. Srinivasulu Naidu, B. Studies in solid state physics; Resistivity, thermoelectric power and optical absorption studies in amorphous Ge and GaSb films. Sri Venkateswara University.
9. Subrata Nath. Use of surface of revolution geometry for the measurement of different elastic scattering cross section of fast neutrons. University of Calcutta.
10. Tayal, Vijay Prakash. Liberation spectra of certain crystal hydrates. Kanpur University.

Chemistry

1. Das, Himadri Kumar. Studies on solvent extraction and spectrophotometric determination of some metal ions with diphenylcarbazone. University of Gauhati.
2. Dave, Jagdish Kumar. Studies in the synthesis and analytical applications of luminescent reagents. University of Indore.
3. Desai, S.R. Studies in Environmental Pollution. Gujarat University.
4. Dhal, Purnananda. Influence of structural changes on absorption and pharmacological activity. Sambalpur University.
5. Ghosh, Kamala. Synthesis of polycyclic hydrocarbons by Diene systems. University of Burdwan.
6. Mali, Bhagwat Dattoba. Studies of coordination compounds. Marathwada University.
7. Mandal, Santosh Kumar. Studies on electron exchange columns, manganese (IV) as an oxidimetric reagent, and reduction of permanganate in sulphuric acid solutions. Utkal University.
8. Mashruwala, S.V. Synthesis of Basic Acids as local Anesthetics. Gujarat University.
9. Matta, Ram Prakash. Electrical effects during phase transformations dissolution and precipitation potentials of electrolytes. University of Kashmir.
10. Misra, Bidyabati. Solvent extraction of iron (III) from hydrochloric acid solution with sulphoxides. Utkal University.
11. Nagesowara Rao, D. Studies in the synthesis of 2, 3-Diphenylfurane compounds. Kakatiya University.
12. Narola, B.J. Development of osmotic membrane for the reverse osmosis process. Saurashtra University.
13. Prasad, K.V.S.L.V. Studies on the extraction of vanadium (IV) in the presence of carboxylic acids and natural donors. Nagarjuna University.
14. Raghunath Rao, P. Kinetics of oxidation of benzaldehydes by potassium permanganate. Kakatiya University.
15. Ray, Ranjit Kumar. Chromatographic studies on metal complexes. University of Burdwan.

16. Rout, Swoyam Prakash. Kinetics of redox polymerization involving cerium (IV), vanadium (V), and chromium (VI). Utkal University.

17. Sangapure, S.S. Studies in benzofurms. Karnatak University.

18. Singh, A.K. I.A phytochemical investigation of some Indian medicinal plants. II. Studies directed towards the synthesis of steroidal systems of potential biological interest and a novel transformation of hederagenin. Indian Institute of Technology, Kanpur.

19. Sree Ayinampudi. The triterpenoid constituents of *Acacia concinna* DC and their stereochemistry. Andhra University.

20. Verma, Kamna. Studies on 3-hydroxyretinol. University of Gauhati.

21. Vyas, R.A. Chemical investigations on analytical reagents. Gujarat University.

Earth Sciences

1. Panakala Rao, D. A comparative study of some physical processes governing the potential productivity of the Bay of Bengal and Arabian Sea. Andhra University.

2. Sinharay, Sabimal. Structural and metamorphic history of the Daling and associated rocks in the Rangpo-Chu Valley. North of Pedong, Darjeeling District, West Bengal, India. University of Calcutta.

Engineering & Technology

1. Arunachalam, M. Solid state speed control of induction motors. Indian Institute of Technology, Kanpur.

2. Bhawe, Pramod Raghunath. Optimization of water distribution systems. Nagpur University.

3. Chitale, Avinash Krishan. Investigations in the mechanics of drilling process. University of Indore.

4. Narasimha Reddy, P. Performance of rotary tools. Kakatiya University.

5. Rajagopalan, S.P. Digital models for aquifer evaluation in alluvial plants with special reference to anisotropy and partial penetration. Indian Institute of Technology, Kanpur.

6. Singh, L.P. Group theoretic considerations in the analysis of power system network. Indian Institute of Technology, Kanpur.

7. Wani, N.S. Thyristor controllers for slipring induction motors. Indian Institute of Technology, Kanpur.

BIOLOGICAL SCIENCES

Biochemistry

1. Chattopadhyay, Ramdas. Studies on nuclear histones and acidic proteins of brain in different animal species. University of Calcutta.

2. Jangle, Suresh Narayanrao. Study of some liver enzymes of glycolytic pathway as affected by dietary changes. Marathwada University.

3. Nath, Mukti Madhav Chandra. Effect of certain factors on ascorbic acid metabolism in animals. Nagpur University.

4. Singh, Bal Raj. Aspects of N-acetyl-D-glucosamine transport and metabolism in yeast. Jawaharlal Nehru University.

Botany

1. Bhattacharjee, Parimal Chandra. Ecology of *Achatina* (*Lissachatina*) *fulica fulica* (Bowdich): Distribution in Gauhati University of Gauhati.

2. Dandin, S.B. Cytogenetical studies in the genus *Paspalum* L. Karnatak University.

3. Das, Harendra Narayan. Studies on the action of certain synthetic plant hormones and mineral elements on the growth, yield and quality of groundnut. University of Gauhati.

4. Dasgupta, Padma. Isolation, characterisation and biological activities of naturally occurring compounds. University of Calcutta.

5. Datta, Susantakumar. An investigation into the effects of some indigenous plants of toxic significance. University of Calcutta.

6. Kabi, Manik Chandra. A study on host-Rhizobium interaction with special reference to rhizobial induced chlorosis in soybean. University of Burdwan.

7. Kar, Manoranjan. Studies on the biochemical and enzymological aspects of rice leaf senescence. Utkal University.
8. Mane, Dattatraya Annarao. Studies in air spora over some fields. Marathwada University.
9. Patel, K.R. Histochemical studies on effects of some growth regulators on nucleic acids. Proteins ascorbic acid and enzyme metabolism. Gujarat University.
10. Prabhakar Naidu, C.S. Physiological studies in gymnosperms with special reference to photosynthesis. Sri Venkateswara University.

11. Ray, Ajit Kumar. Studies on salt tolerance in some varieties of Rice, *Oryza sativa* L. University of Burdwan.

Zoology

1. Anisa Banu. Studies on the histology and histochemistry of foot and shell in some byssus bearing Pelecypods. Andhra University.

2. Awad, Vishwas Ramkrishnarao. Studies on some physiological aspects of the insect *heliopsis armigera* (Hubner). Marathwada University.

3. Bandyopadhyay, Timir Kumar. The chronology of meiosis and spermiogenesis in *Heteropneustes fossilis*, *Bufo melanostictus*, *Calotes versicolor* and *Bos indicus*. University of Burdwan.

4. Biradar, Mallikarjun Kalyanrao. Studies on physiology of respiration in fresh water mussel *parreysia*. Marathwada University.

5. Chengalraju, D. Some aspects of derangement of glycogen and associated metabolism in progressive muscular atrophy. Sri Venkateswara University.

6. Das, Prabir Kumar. Studies on the effect of inoculum density, soil type and irrigation on the disease intensity of some crop plants by rootknot nematodes. Visva-Bharati.

7. Joardar, Sumita. The duration of various stages of meiosis and spermiogenesis in the dog, chicken and pigeon. University of Burdwan.

8. Joshi, Kailash Chandra. Studies on the bionomics and control of the tent caterpillar, *Malacosoma indica* Wlk (Lepidoptera; Lasiocampidae) in the Kumaun Hills. Kumaun University.

9. Kondaiah, S. Impact of host-parasite relationship on nitrogen metabolism of the host. Sri Venkateswara University.

10. Laliwal, S.M. The functional Anatomy of respiratory organs of certain Arachnids. Gujarat University.

11. Nandi, Nepalchandra. Blood parasites of Indian avifauna. University of Calcutta.

12. Radhkrishnaiah, K. Some aspects of the energetics of thermal adaptation in eurythermal freshwater Teleost, *Tilapia mossambica* Peters. Sri Venkateswara University.

13. Sadhukhan, Subhas Chandra, Effect of barbiturate on the hypto thalamo-Neurohypophyseal system, thyroid, adrenal and testis in the garden lizard, *Calotes versicolor*. University of Burdwan.

14. Sinha, Jitendra Nath. Analysis of some factors of the invasive stage of *Trichinella Spiralis* (Nematoda: Trichinelidae) with a note on the inoculation experiment. University of Burdwan.

15. Surya Dhanapathi, Marepalli Venkata Subrahmanya Satya. The systematics and some aspects of ecology of the fresh water rotefera from Andhra Pradesh, India. Andhra University.

16. Thomas, V.C. Studies in feeding mechanism of birds in relation to feeding behaviour. Gujarat University.

Medical Sciences

1. Patel, M.R. Pharmacy of new Medicinal Compounds. Gujarat University.

Agriculture

1. Afzal, S.M. Javed. Chemical modification of radiation damage in relation to the decay of the radiation induced oxygen-sensitive and insensitive sites in barley seeds. Jawaharlal Nehru University.

2. Haribansh Singh. Studies on genetic parameters in barley (*Hordeum vulgare* L.) in a 12 x 12 diallel set. Kanpur University.

3. Madan, Surinder Pal Singh. Studies on the nutrition of white onion (*Allium cepa* L.) variety Punjab-48. Punjab Agricultural University.

4. Mishra, Aaddya Prasad. Partial diallel analysis in relation to breeding for yield and its components in linseed. Kanpur University.

5. Sinha, Rameshchandra Ramlalsingh. Critical analysis of the use of audiovisual aids by extension teachers and extension workers. Punjabrao Krishi Vidyapeeth.

Additions to AIU Library

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Altbach, Philip G., ed. *Comparative perspective on the academic profession*. New York, Praeger (c1977) xii, 214p.

Anderson, T.W. *Introduction to multivariate statistical analysis*. New York, Wiley, 1972. xii, 374p.

Arena, Eduardo and others. *Economic analysis of educational television in Maranhao, Brazil*. Paris, Unesco, 1977. 48p.

Ben-David, Joseph. *Centers of learning; Britain, France, Germany, United States*. New York, McGraw-Hill. (c1977) xiv, 208p.

Elvin, Lionel. *Place of cammensense in educational thought*. London, Allen and Unwin, 1977. 153p.

Freeman, Richard B. *Over-educated American*. New York, Academic (c1976) ix, 218p.

Grayson, Lawrence P. and others. *Man-made moons: Satellite communications for schools*. Washington, National Education Association, 1972. 48p.

Hans Raj. *Fundamentals of demography: Population studies with special reference to India*. Delhi, Surjeet Pub. 1978. iv, 340p.

International Development Research Centre, Ottawa. *Education research priorities: A collective view*. Ottawa, Author, 1976. 27p.

Lorenz, Konrad. *Behind the mirror: A search for a natural history of human knowledge*. Tr by Ronald Taylor. London, Methuen (c1977). 261p.

Matthai, Ravi J. and others. *Management proceses in universities: A study of decision-making and organizational health in two agricultural universities*. Ahmedabad, Indian Institute of Management, 1978.

McCann, Phillip, ed. *Popular education and socialization in the nineteenth century*. London, Methuen, 1977. xii, 276p.

Morris, Desmond. *Manwatching: A field guide to human behaviour*. London, Elsevier (c1977). 320p.

Naik, Sadanand. *Reading interests and abilities of adolescents and adults*. Dharwar, University of Karnatak. 1970. xvi, 378p.

Parekh, Bhikhu, ed. *Colour, culture and conciousness: Immigrant intellectuals in Britain*. London, Allen & Unwin, 1974. 249p.

Poteet, James A. *Behaviour modification: A practical guide for teachers*. London, University of London Press (c1973) viii, 104p.

Ranade, S.N. and Ramachandran, P. *Women and employment*. Bombay, Tata Institute of Social Sciences, 1970. vii, 60p.

Sanger, Clyde. *Project impact; A progress report on Innotech Project impact in the Phillippines and Proyek Pamong in Indonesia*. Ottawa International Development Research Centre. 1977. 56p.

Science, society and scientific attitude. Bangalore, Bangalore University, 1976. 276p.

Stubbs, Michale. *Language schools and clsssrooms*. London, Methuen, 1976. 128p.

Subba Rao, K. *Man and society*. Bangalore, Bangalore University, 1971. vii, 89 p.

Thoughts of education. Bangalore, Bangalore University (c1974) 128p.

Trower, Peter and others. *Social skills and mental health*. London, Methuen (c1978) 306p.

Tyler, William. *Sociology of educational inequality*. London, Methuen, 1977. 143p.

Uday Shanker. *About the implementation of the 10+2+2 (or3) scheme of education*. Kurukshetra, Extension Services Department, 1976. 43 p.

Unesco. *Present situation and trends of research in the field of special education*. Paris, Author, 1973. 306p.

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Venkataraman, K.N. and others. *Student-aid-fund: An assessment*. Madras, University of Madras, 1976. 75p.

Venkateswara Rao, T. *Student orientations in professional education*. Ahmedabad, Indian Institute of Management, 1978. iii, 209p.

UNIVERSITY OF GORAKHPUR Gorakhpur

Advertisement No. 7

Applications on the prescribed form (8 copies, available from the office of the Registrar on payment of Rs. 5/- for the post of Reader and Rs. 2/- for the post of lecturer as registration fee payable in cash or postal order drawn in favour of the Registrar, University of Gorakhpur, Gorakhpur by name, are invited so as to reach this office through the employer, if employed, not later than 31.10.78 for the following posts:

1. Lecturer

Fine Arts and Music—One Post permanent
Psychology—One Post temporary
Military Science—Four Posts temporary
Maths—Two Posts temporary
Scale of Pay: 700-40-1100-50-1600

Qualifications

(1) (a) A doctorate in the subject of study concerned or a published work of a high standard in that subject, and

(b) Consistently good academic record (that is to say the overall record of all assessments throughout the academic career of a candidate) with first class or High second class (that is to say, with an aggregate of more than 54% marks) Master degree in the subject concerned or equivalent degree of a foreign university in such subject,

(2) Where the Selection Committee is of the opinion that the research work of a candidate as evidenced either by his theses or by his published work, is of a very high standard, it may relax any of qualifications specified in sub-clause (b) of clause (1).

(3) If a candidate possessing a qualification in sub-clause (a) of clause (1) is not available or is not considered suitable due weightage being given to M.Phil or equivalent degree or research work of quality, may be appointed on the condition that he will attain the prescribed qualification (namely doctorate or published work as aforesaid) within 5 years from the date of his appointment.

Provided that where the teacher so appointed fails to attain the prescribed qualification within the said period of 5 years, he shall not be entitled to yearly increments after such period until he attains such qualifications.

2. Reader

Ancient History—One post temporary
Mathematics—One post temporary
Law—One post permanent
Scale of Pay: 1200-50-1300-60-1900

Qualifications

Persons should possess the minimum qualifications prescribed for the post of a lecturer as mentioned above and in addition, the candidate should have:

(a) Post-graduate teaching experience of at least 5 years.

(b) Capacity of conducting and guiding research.

In exceptional cases the Selection

Committee may relax the above qualifications in view of long term teaching experience and research work of a high order.

Note

I. The candidates will be required to appear for interview, if called, at their own expenses.

II. The Selection Committee may recommend higher initial salary to a person specially qualified for the above posts, subject to the approval of U.P. Govt.

III. The Selection Committee may recommend for appointment any candidate from amongst those called for interview against any such post which has fallen vacant in addition to the advertisement at the time of interview.

IV. It will be open to university not to fill up any post advertised.

V. Canvassing in any form by or on behalf of the candidate will disqualify him.

REGISTRAR

UNIVERSITY OF INDORE

University House, Indore-452 001
No. Estt./III (2)/78 Dated: 6/10/1978
Advertisement

Applications on the prescribed form obtainable from the University Office on payment of Rs. 3/- (in the shape of Crossed Indian Postal Order), are invited for the following posts:

(i) Economics—One post of Lecturer.

(ii) Education—Two Temporary posts of Lecturer (likely to be made permanent).

Qualifications & Pay Scales

Lecturers

Rs. 620-40-900-50-1400/-.

A. (a) (i) A Doctor's Degree or published research work of an equivalent high standard; and

(b) (i) A 2nd class Master's degree in a relevant subject with at least 50% marks (B in the seven point scale) or an equivalent degree of a foreign University; and

N.B. (ii) At least 50% marks at the Bachelor's degree examination on the basis of which division is awarded at the degree level by the University; and

(iii) At least 50% marks at the Higher Secondary/Intermediate/Pre-University Examination, as the case may be.

Having regard to the need for developing inter-disciplinary programmes the degree in (a) and (b)(i) above may be in relevant subjects.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing the following qualifications may be recruited:

B. (i) A 2nd class Master's degree in a relevant subject with at least 50% marks (B in the seven point scale); and
N.B. (while taking into account the marks/grade, the marks/grade obtained in internal assessment, if any, shall be excluded) and

(ii) 2 years' experience of research work or practical experience in research laboratory/research organisation; and

(iii) At least 50% marks at the Bachelor's degree examination the basis of which division is awarded at the degree level by the University; and

(iv) At least 50% marks at the Higher Secondary/Intermediate/Pre-University examination, as the case may be.

OR

C. (i) A Master's degree with first class or Grade 'A' in a relevant subject; and

(ii) At least 50% marks at the Bachelor's degree examination on the basis of which division is awarded by the University; and

(iii) At least 50% marks at the Higher Secondary/Intermediate/Pre-University Examination, as the case may be.

Provided further that in the case of categories (B) and (C) a candidate will have to obtain a Doctor's degree/M.Phil degree or have to his credit published research work of equivalent standard within 5 years of his appointment failing which he will not earn future increments until he fulfils these requirements.

The above scales carry with them A.D.A., H.R.A., Medical re-imbursement and C.P.F. benefits as per University Rules. A higher start can be given to deserving candidates.

Preference will be given to the Scheduled Caste, Scheduled Tribes and Handicapped candidates if found suitable. Candidates already in service should apply through proper channel.

Applications (8 copies) duly filled in and accompanied with crossed Indian Postal Order of Rs. 5/- (Rupees Five) should reach the undersigned on or before 30.11.1978. The envelope

containing the application forms should be marked as "APPLICATION FOR LECTURER in. Applications should be complete in every respect. Incomplete applications and the applications received after the due date will not be considered.

The University reserves the right to fill-up or not to fill-up the post and/or to call only selected candidates for interview at their own cost.

REGISTRAR

THE UNIVERSITY OF BURDWAN

Rajbati : Burdwan West Bengal
Advertisement No. 4/78-79
Dated 4th October, 1978

Applications in the prescribed form are invited for the following posts in the approved scales of pay (viz. Reader—Rs.1200-50-1300-60-1900/- and Lecturer—Rs. 700-40-1100-50-1600/-) with allowances and other benefits according to University Rules.

A. Department of Chemistry

- (i) Reader—One post
- (ii) Lecturer—One post

B. Department of Botany

- Lecturer—Three posts
(one Temporary)

C. Department of Bengali

- Lecturer—Two posts

D. Department of Sanskrit

- Lecturer—One post

E. Department of Philosophy

- Lecturer—One post

F. Department of Commerce

- Lecturer—Two posts

G. Department of Economics

- Lecturer—Two posts

H. Department of Political Science

- Lecturer—One post

Minimum Qualifications

- (a) A Doctor's Degree or published research work of an equally high standard; and
- (b) Consistently good academic record with first or high second class (B in the seven point scale) Master's Degree in the relevant subjects or an equivalent degree of a foreign University.

Desirable Qualifications: Specialisation or Proficiency

For A

- (i) Specialisation in Inorganic Chemistry with five year's research experience in inorganic reaction Kinetics or specialisation in Organic Chemistry with five years' research experience in Phyto-Chemistry.
- (ii) (a) Specialisation in Physical Chemistry (b) Atleast three years' research experience or three years' teaching experience at the B.Sc. or M.Sc. level.

For B

- (i) One post with area of specialisation in Genetics.
- (ii) One post with area of specialisation in Bryology/Pteridology.
- (iii) One post (Temporary) with area of specialisation in Algology/Palaeobotany/Systematic Botany/Mycology & Plant Pathology.

For C

- (i) One post with area of specialisation in Bengali Linguistics.
- (ii) One post with area of specialisation in Vaisanaba Literature.

For D

Veda/Epigraphy.

For E

Any branch of the subject.

For F

- (i) One post with specialisation of Industrial Psychology/Labour and Industrial Relations/Manpower Planning & Management of Human Resources/Labour Laws.

- (ii) One post with specialisation of Accounting, Finance & Control Area.

For G

Agricultural Economics/International Economics. Must also be able to teach Welfare Economics and History of Economic Thought.

For H

International Relations.

The University Council may on recommendations of the appropriate Selection Committee, waive any of the requirements in view of (he candidate's specialised knowledge in the subject. The choice of the Committee may not necessarily be confined to those who apply formally.

For application form and other information apply to the Registrar with a self-addressed stamped (o.40p.) envelope (9"×4").

Last date for submission of application with requisite fee of Rs. 5/- is **November 15, 1978.**

A.K. CHAUDHURI
REGISTRAR

THE UNIVERSITY OF KASHMIR, SRINAGAR

Notice

Applications on plain paper to reach the undersigned on or before **October 26, 1978** are invited for the following temporary posts:

S. No.	Post	No. of posts	Grade
1.	Senior Scientific Officer	One	1100-50-1600
2.	Technician C	Three	280-12-500-EB-15-560

The details in respect of the qualifications prescribed for the posts can be had from the office of the undersigned.

Saif-ud-Din-Soz
REGISTRAR

GAUHATI UNIVERSITY GAUHATI-781014

Advertisement No. 10 of 1978

Applications are invited for the following posts:

- 1. Professor of Economics—One Post (5th Plan)
- 2. Reader in Chemistry—One Post (5th Plan)

Specialisation: Open

- 3. Reader in Statistics—One Post (5th Plan)

Specialisation: Open

- 4. Reader in English—One Post (5th Plan)

Specialisation: Open

- 5. Reader in History—One Post (5th Plan)

Specialisation: Mediaeval Indian History: Preference will be given to one having working knowledge of Persian/Arabic.

- 6. Reader in Philosophy—One Post (5th plan)

Specialisation: Open

- 7. Reader in Folklore—One post (5th plan)

Specialisation: Knowledge of Folk Music or Folk Art may be considered an additional qualification.

- 8. Reader in Commerce—One Post (5th plan)

Specialisation: Open

- 9. Reader in Bengali—One Post (5th plan)

Specialisation: (i) Comparative study based on English and Bengali Literature or

(ii) any trend of Modern Bengali Literature

- 10. Reader in Arabic—One Post (5th plan)

Specialisation: Open.

- 11. Reader in Assamese—One Post (5th Plan)

Specialisation: Candidate should be an M.A. either in English or Assamese with specialisation in Assamese Literature (in both cases)

- 12. Reader in Environmental Research—One post (5th plan)

Specialisation: 1. Master's degree in Physics followed by a doctorate degree in Physics or allied subject. 2. Continuous research in Seismological and meteorological problem as evidenced by published papers.

- 13. Reader in Education—One Post (Permanent)

Specialisation: Open

- 14. Reader in Law—One Post (5th plan)

- 15. Lecturer in Linguistics—Two Posts (5th plan)

Specialisation: Historical and comparative Linguistics American Descriptive Linguistics, Applied Linguistics for one post and T-G Grammar, Sociolinguistics, Psycholinguistics for the other.

- 16. Lecturer in Economics—One Post

Specialisation: Open

- 17. Lecturer in Hindi—Two posts (Permanent)

Specialisation: For one post comparative Literature in Folklore and the other open

- 18. Lecturer in Commerce—Two Posts

Must be competent to teach Business Statistics and Business Administration/Business Environment.

- 19. Lecturer in Journalism—One Post (part-time on a fixed pay)

20. Systems Engineer (Computer centre)—On Post (5th Plan)
21. Professor of Business Administration—Two Posts (5th Plan)
22. Reader in Business Administration—Three Posts (5th Plan)
23. Lecturer in Business Administration—Six Posts (5th Plan)

Specialisation for the posts of Lecturers, Readers and Professors in Business Administration.

Candidates holding Master's degree in Business Administration/Business Economics/Commerce/Operations Research/Statistics/Mathematics/Economics/Technology/Psychology with specialisation in any of the following areas:

Financial Management, Marketing Management, Production Management, Managerial Economics, Quantitative Technique for Business Decisions, Management Information Systems, Industrial Psychology, Industrial Relations and Laws.

Scales of Pay: Professor: Rs. 1500-60-1800-100-2000-125/2-2500

Reader: Rs. 1200-50-1300-60-1900

Lecturer Rs. 700-40-1100-50-1600

Systems Engineer: Rs. 1100-50-1300-60-1600

All Posts carry usual allowances admissible under the University rules in force from time to time.

In a case where specialisation has not been mentioned against a post candidates should state their areas of specialisation at the Master's and Doctor's degree levels.

ESSENTIAL QUALIFICATION

Professor: An eminent scholar with published work of high quality actively engaged in research. Ten years' experience of teaching and/or research. Experience of guiding research at doctoral level.

Or

An outstanding scholar with established reputation who has made significant contribution to knowledge.

Reader: Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

About five years' experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position. This condition may be relaxed in the case of candidates with outstanding research work.

Lecturer: (a) A Doctor's degree or research work of an equally high standard, and (b) Consistently good academic record with 1st or high Second Class (B in the seven point scale) Master's degree in a relevant subject or an equivalent degree of a foreign University. Having regard to the need for developing inter-disciplinary programmes, the degrees in (a) and (b) above may be in relevant subjects.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may

relax any of qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a consistently good academic record (weightage being given to M. Phil or equivalent degree or research work of quality) may be appointed provided he has done research work for atleast two years or has practical experience in a research Laboratory/organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Candidates for being eligible for recruitment to the posts of Lecturers must have a 1st or high Second Class (B in the seven point scale) at the Master's level and for determining consistently good record, average of 50%-55% may be expected at the two examinations prior to the Master's examination.

READER (LAW): ESSENTIAL

(a) Consistently good academic record with First or High Second Class (B+) Master's degree in Law or any equivalent degree of a foreign University.

(b) Experience of at least eight years' teaching in Law.

Preferential

A Doctor's Degree in Law or published work of an equally high standard.

Systems engineer: M. Tech. degree in Computer Science/Technology with training in system software for TDC-316 computer system and atleast 3 years' experience in any computer Centre.

Lecturer in Journalism: Candidates must have good academic record with first or high second class Master's degree in Arts, Science or Commerce with a degree or diploma in Journalism. Preference will be given to those who have teaching experience as also practical experience in daily Newspaper in the editorial and/or production side for not less than five years. In case of candidates of exceptional abilities with outstanding professional experience the requirement of any of the prescribed qualifications may be suitably relaxed.

Applications in plain paper in quadruplicate giving full bio data including (1) Name in full (in block letters), (2) Father's name (3) Date of birth by the christian era (4) (a) Permanent residence and address (in full), (b) present address (in full), (5) Present occupation if any and name of employer, (6) Present salary drawn (if any), (7) Detailed academic career with mark sheets and subjects studied (including Honours) in degree and postgraduate courses from Matriculation/Higher Secondary/High School Leaving Certificate Examination onwards and copies/reprints of research contributions, (8) Name and address of two referees not related to candidate together with an application fee of Rs. 10 (ten) (Rs. 7.50 in case of Scheduled Caste/Scheduled

tribe candidates) by **CROSSED INDIAN POSTAL ORDER** drawn in favour of Gauhati University payable at the Gauhati-781014 post office should be sent in an inner sealed cover superscribed application for post of (name of post applied for) Advt. No. 10 of 1978 enclosed in an outer cover addressed to Dr. K.C. Bhattacharyya, M.A., Ph.D., Registrar Gauhati University, Gauhati-781014 to reach him not later than **30 October, 1978**. The number of this advertisement and name of the post applied for must be referred to in the application. Persons in employment should apply through proper channel or with a no-objection certificate from the present employer.

The University has accepted the principle of reservation of posts for Scheduled tribe and Scheduled Caste candidate according to the norms of the State Government. Candidates should submit necessary certificate from the Deputy Commissioner/District Magistrate if they belong to Scheduled Caste, or Scheduled Tribe.

Candidates will be required to appear at an interview if and when called for.

Canvassing directly or indirectly will be a disqualification.

BANARAS HINDU UNIVERSITY

Advertisement No. 4/1978-79

APPLICATIONS are invited for the undermentioned posts. The benefit of Provident Fund/Pension, Dearness Allowances, House Rent Allowance and City Compensatory Allowances are admissible according to University Rules. The retirement age of University Employee is 60 years. The appointment will be made on two years probation on all permanent posts. Higher starting salary within the grade is admissible to specially qualified and experienced candidates.

Applications will be entertained on the prescribed form duly supported with a Bank Draft or Crossed Indian Postal Orders for Rs. 7.50 in favour of the Registrar, Banaras Hindu University towards the application fee. Application forms alongwith the leaflet of information will be supplied free of cost by the Registrar (Selection Committee Section), Banaras Hindu University, Varanasi-221005 on receipt of Rs. 0.55 paise stamped self-addressed envelope of 23 cm x 10 cm size. Candidates called for interview for these posts will be paid actual Railway fare by the Second class plus reservation charges for sleeper, if paid, and/or actual Bus fare from the present residence hothways by the shortest route as per University Rules. No other expenses will be paid.

Applications for each post be sent separately alongwith attested copies of certificates in support of the qualifications and experience mentioned in the application be addressed to the Registrar (Selection Committee Section). Banaras Hindu University, Varanasi-221005. India.

Incomplete application in any respect

will not be entertained for consideration.

Those who are in service should apply through proper channel. M.O. or Cheque will not be accepted towards the application fee.

For the posts of Lecturers, other things being equal preference will be given to Scheduled Caste/Scheduled Tribes candidates who are considered fit.

Last Date for Receipt of Application is October 31, 1978.

INSTITUTE OF TECHNOLOGY

Grade

Professor—Rs. 1500-60-1800-100-2000-125/2-2500.

Reader —Rs. 1200-50-1300-60-1900.

Lecturer —Rs. 700-40-1100-50-1600.

Professor of Coal Mining (for three years in the first instance)

2. Professor of Mining Engineering (Mine Environment)

3. Professor of Mining Engineering (Mining Machinery)

Qualifications

Essential

(1) Doctorate Degree and/or published work of high standard. (2) A first or second class Master's Degree in the subject concerned or any equivalent qualification. (3) About ten years' experience—in responsible position in teaching/research/industry. (4) Experience of having guided research work of a high standard or evidence of original work in Design/Development etc.

Desirable

(1) Corporate Membership/Fellowship of professional organisations/learned societies. (2) Research publications in standard Journals.

Note

Candidates holding first class Mine Manager's certificate and first class colliery Manager's certificate or otherwise well qualified will also be considered if they do not hold the Master's Degree in Mining Engg. or Doctorate Degree.

4. Reader in Mining Engineering (Open-cast Mining)

Qualifications

Essential

(1) Doctorate Degree in the subject and/or published work of high standard. (2) A first or second class Master's Degree in the subject concerned or any equivalent qualification. (3) About five years experience in responsible position in teaching/research/industry.

Desirable

(1) Research publications in standard journals. (2) Membership of the learned bodies and societies.

Note

Candidates holding first class Mine Manager's certificate and first class colliery Managers' certificate will also be considered if they do not hold the Master's Degree in Mining Engg. or Doctorate Degree.

5. Lecturer in Mechanical Engineering

Qualifications

Essential

(1) Consistently good academic record with first or high second class (B+) Master's Degree in the subject concerned or an equivalent degree of a foreign University. (2) Some experience of teaching/research/industry.

Desirable

(1) Doctorate Degree in the subject. (2) Specialisation in any of the following field: (a) Production Engg., (b) Plasticity, (c) Applied Mechanics, (d) Gas Dynamics, (e) Power Plant Engg. (f) Heat Transfer.

Note

Those who have already obtained Doctor's Degree in the subject concerned will also be considered irrespective of the fact whether they have a Post-Graduate Degree in the subject or not (applicable for all the above posts in the Institute of Technology).

INSTITUTE OF MEDICAL SCIENCES

Grade

Professor—Rs. 1500-60-1800-100-2000-125/2-2500 N.P.A. admissible

Reader—Rs. 1200-50-1300-60-1900 as per rules

6. Professor of Ophthalmology (Temporary) (For two years only)

Qualifications

Essential

(1) M.B.B.S. or equivalent qualification recognised by Medical Council of India. (2) M.S. (Ophthalmology), M.D. (Ophthalmology) speciality Board of Ophthalmology (U.S.A.), F.R.C.S. (Ophthalmology). (3) Atleast five years teaching experience as Associate Professor/Reader in Ophthalmology in a Medical College.

Desirable

(1) Research publications in standard Journals.

7. Professor of E.N.T. (Otology)

Qualifications

Essential

(1) M.B.B.S. or equivalent qualification recognised by the Medical Council of India. (2) M.S. (Oto-Rhino-Laryngology) or equivalent qualification recognised by the Medical Council of India. (3) Teaching experience as Reader/Associate Professor for five years in a Medical College in the speciality.

Desirable

(1) Training in Otology and Neuro-otology. (2) Research publications.

8. Professor of Microbiology

Qualifications

Essential

(1) M.B.B.S. or equivalent qualification recognised by the Medical Council of India. (2) Post-Graduate Degree in Microbiology viz. M.D., Ph.D., M.Sc.: D.Sc. or an equivalent qualification recognised by the Medical Council of India. (3) Atleast 5 years teaching experience as Reader/Associate Professor in a Department of Microbiology in a Medical College after obtaining requisite Post-Graduate qualification.

Desirable

(1) Evidence of high grade research in the field of Medical Microbiology and publications.

9. Reader in Biological Psychiatry

Qualifications

Essential

(1) M.B.B.S. or equivalent qualification recognised by the Medical Council of India. (2) M.D. (Psychiatry), M.D. (Psychological Medicine), Speciality Board of Psychiatry and Neurology

(U.S.A.), M.D./M.R.C.P. in Medicine with Diploma in Psychological Medicine, (3) Teaching experience as Asstt. Professor/Lecturer in Psychiatry for three years in a Medical College.

Desirable

(1) Preference will be given to a candidate having experience of teaching Biological Psychiatry. (2) Research & publications in standard journals.

FACULTIES OF SCIENCE & HUMANITIES

Grade

Professor—Rs. 1500-60-1800-100-2000-125/2-2500.

Readers —Rs. 1200-50-1300-60-1900.

Lecturers—Rs. 700-40-1100-50-1600.

10. Professor of Painting

11. Professor of English

12. Professor of Mathematics

13. Irwin Professor of Agricultural Sciences

14. Professor of Chemistry (Organic)

15. Aurobindo Professor of Indian Philosophy

16. Professor of History of Arts & Aesthetics

Qualifications

An eminent scholar with published work of high quality, actively engaged in research. Ten years experience of teaching and/or research. Experience of guiding research at Doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

Note

Those who have already applied for the post of Professor of Chemistry (Organic)—post No. 14, in response to our previous advertisement, need not apply again.

17. Reader in Sanskrit (Mahila Mahavidyalaya)

18. Reader in Philosophy

19. Reader in Political Science (Mahila Mahavidyalaya)

20. Reader in Biochemistry (School of Life Sciences)

21. Reader in Biochemistry (Dept. of Chemistry)

22. Reader in Agricultural Botany (Plant Genetics)

23. Reader in Physics and Maths

Faculty of Agriculture

Qualifications

Good academic record with a Doctoral Degree or equivalent published work.

Evidence of being actively engaged in (i) research or (ii) innovated in teaching methods or (iii) production of teaching materials.

About five year's experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding research work.

Note

Other things being equal preference will be given to female candidate—for post No. 18 and 20.

24. Lecturer in English

25. Lecturer in Physics (Mahila Mahavidyalaya)

26. Lecturer in Biochemistry

27. Lecturer in Botany (School of Life Sciences)

28. Lecturer in Zoology (School of Life Sciences)

29. Lecturer in Pali

Qualifications : Essential

- (1) A Doctor's Degree or research work of an equally high standard; and
- (2) Consistently good academic record with first or high second class (B in the seven point scale) Master's Degree in the relevant subject or an equivalent degree of a foreign university.

Having regard to the need for developing inter-disciplinary programme, the degree in (1) and (2) above may be in relevant subjects.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of qualification prescribed in (2) above.

Provided further that if a candidate possessing a Doctor's Degree or equivalent research work is not available or is not considered suitable, a person possessing a consistently good academic record (weightage being given to M.Phil. or equivalent degree or research work of quality) may be appointed provided he has done research work for atleast two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's Degree or give evidence or research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Explanation

Candidates for being eligible for recruitment to the posts of Lecturers must have a first or high second class (B in the seven point scale) at the Master's level and for determining consistently good record, average of 50-55% may be expected at the two examinations prior to the Master's examination.

Note

For post No. 26—Lecturer in Physics—Other things being equal preference will be given to a female candidate.

30. Lecturer in Drawing (Interior Decoration).

Qualifications

Essential

(1) A first or second class Master's Degree in the subject or an equivalent degree from a recognised Art Institution with special knowledge of Interior Decoration.

Desirable

(1) Atleast two years professional/teaching experience in Interior Decoration/Applied Arts. (2) To take all the classes of Applied Arts subject and to instruct in Hindi Language.

Note

Those who have applied in response to previous advertisements need not apply again.

31. Lecturer in Plastic Arts

Qualifications

Essential

(1) A first or second class Master's Degree in the subject or an equivalent qualification from a recognised Art Institution.

Desirable

(1) Specialization in bronze casting and welding. (2) Teaching experience in Any Art Institution.

32. Lecturer in Painting

Qualifications

Essential

(1) A first or second class Master's Degree in Painting or an equivalent degree from a recognised Art Institution.

Desirable

(1) Professional experience in the field as an artist/graphic design of outstanding talent. (2) Teaching experience at professional Institution.

33. Lecturer in Mridangam (Karnatak Music)

Qualifications

Essential

(1) A first or second class Post-Graduate Degree or Diploma in the subject from a recognised University/Institution.

Desirable

(1) Teaching experience in an University or in a recognised Institution.

Note

1. Selection Committee will have the right to relax the essential qualifications in the case of a person who is a renowned artist.
2. Those who have applied in response to earlier advertisements need not apply again.

ANDHRA UNIVERSITY

Advertisement

Applications in the prescribed form are invited for the following posts so as to reach the Registrar, Andhra University, Waltair on or before **3-11-1978**. Each application shall be accompanied by a crossed Indian Postal Order for Rs 10/- (Rupees ten only) or a Bank receipt remitting that amount in the State Bank of India to the credit of A.U. General Account (Ordinary) towards the Registration fee for the application.

A. Teaching

S. No.	Subject	Professor	Reader	Lecturer
1.	Economics	1	2	—
2.	Hindi	—	1	—
3.	Geology	—	1	—
4.	Urdu	—	—	1
5.	Fine Arts	—	1	—
6.	Cooperation and Applied Economics	1 (Temp)	—	—
7.	Adult/Continuing Education	1*	—	—
8.	Philosophy	—	1	—
9.	English	—	—	1

Scale of Pay

Professors: Rs 1500-60-1800-100-2000-125/2-2500

Reader: Rs 1200-50-1300-60-1900

Lecturer: Rs 700-40-1100.50-1600

* Director: Rs 1100-50-1300-60-1600

B. NON-TEACHING

	Name of the Post	No. of Posts	Scale of Pay
1.	Medical Officer	1 (Temp)	Rs 600-30-960-35-1100 Plus Rs 200/- N.P. allowance.
2.	Analyst (Geology Dept.)	1	Rs 400-40-800-50-950 (Non D.A. merged)
3.	Surveyor-cum-Draughtsman (Dept. of Hist. & Arch.)	1	Rs 290-11-400-15-520 (D.A. merged)
4.	Foreman (Dept. of Chem. Engg.)	1	Rs 480-25-780-30-900
5.	Supervisors	2	Rs 430-20-650-25-800

Age: Not exceeding 35 years as on 1-7-78 for Non-teaching posts except to the posts of Medical Officer and Analyst. The age limit is relaxable upto 5 years in case of SC/ST/BC candidates.

The rule of the reservation for SC/ST/BC candidates is applicable for the posts of Lecturers and for the Non-teaching posts.

The details of qualifications prescribed, precise branch of specialisation and preferential qualifications considered desirable for the posts mentioned at A and B will be furnished alongwith the application form.

Requisitions for the application forms for the posts mentioned at A and B may be made to **SRI P. HANUMANTHA RAO**, Joint Registrar, Andhra University, Waltair accompanied by a self-addressed and a stamped envelope and a State Bank of India Challan or Crossed Indian Postal Order for one Rupee. The University reserves the right to fill or not to fill all or any of the posts.

C. JUNIOR RESEARCH FELLOWSHIP—1 (ONE)

- i. Value of the Scholarship—Rs 400/- per month.
- ii. Contingent grant—Rs 1500/-
- iii. Qualifications: First Class M.Sc. Geology or M.Sc. (Tech) Applied Geology with aptitude on research.
- iv. Age: Should be below the age of thirty.

Prescribed application forms for Junior Research Fellowship can be had from the Head of the Department of Geology, Andhra University, Waltair on requisition and the applications duly filled in should be sent to the Head of the Department of Geology, Andhra University, Waltair so as to reach him within the last date.

The cover containing the applications should be superscribed as "APPLICATION FOR APPOINTMENT TO THE POST OF—"

P. Hanumantha Rao
JOINT REGISTRAR

SRI VENKATESWARA UNIVERSITY Tirupati

Applications in the prescribed forms are invited for the following posts on or before 23-10-1978.

1. Scientific Officer / Instrumentation Engineer:

The post may be Teaching or Non-teaching.

(i) Teaching: Scale of Pay—Rs. 1200-50 1300-60-1900. **Qualifications:** It could be designated as Reader provided the person appointed on the post is one (i) who is already on teaching Faculty and seconded to the workshop or (ii) who is in the workshop but assigned teaching duties by the University in addition to work in the workshop and is academically qualified as per UGC Guidelines.
(ii) Non-Teaching: Scale of Pay—Rs. 1100-50-1600

Qualifications

(a) (i) B.E. Electrical/Mechanical/Electronics or M.Sc., (Electronics) OR M.Sc. (Applied Physics)

(ii) Diploma in Instrumentation Engineering of MIT OR M. Tdch. (Instrumentation Engineering); AND

(b) Atleast 5 years of experience in an Instrumentation Laboratory.

2. Foreman (Mech. Workshop): Rs. 550-25-750-EB-30-900.

Qualifications: Second Class B.E./B. Tech. or Diploma in Mechanical Engineering with 3 years experience in workshop practice and ability to lead and supervise the work of a group. (Candidates will have to pass a trade test)

Candidates with additional experience of supervisory work in a Mechanical Workshop will be preferred.

3. Senior Technical Assistant: Rs 550-25-750-EB-30-900.

(i) Instrumentation

Qualifications: Second Class B.E./B. Tech./M.Sc. (Electronics) or a Diploma in Engineering or Electronics/B.Sc., with 3 years experience in operation of Electron Microscope and its repair and maintenance.

(ii) Computer Programme

Qualifications: Second Class B.E./B. Tech./M.Sc. (Electronics) or a Diploma in Computer programme with 3 years experience in writing programmes for the Computer.

4. Assistant Foreman (Machine Shop Carpentry): Rs. 425-15-500-EB-15-560-20-700-EB-25-750.

Qualifications: 10 Years schooling plus a certificate from ITI in carpentry followed by 6 years of experience in Carpentry in any workshop.

5. Junior Technical Assistant (Glass Blowing): Rs 425-15-500-EB-15-560-20-700-EB-25-750.

Qualifications: 10 Years schooling followed by 6 years experience in glass blowing workshop practice (pass in Trade test essential)/Special training in glass blowing from National Labs. is preferable.

6. Technician—GR-C (Instrumentation): Rs. 380-12-500-EB-15-560

Qualifications: 10 years schooling plus a Certificate in Instrumentation with 5 years experience in operation of Spectrophotometers and their maintenance.

7. Technician Grade 'B': Rs. 320-8-400-10-450.

(i) Data Processing/Data Punching

Qualifications: 10 Years of schooling plus a Certificate in Data Processing/Data punching with 2 years experience in the operation and maintenance of punching machine.

(ii) Refrigeration

Qualifications: Certificate Course from ITI in refrigeration with 2 years experience in the servicing and maintenance of Low temperature equipment.

8. Technician Grade 'A' Rs. 225-5-260 6-290-EB-6-308.

Qualifications: Certificate Course from ITI in arc welding with 1 year experience in the trade in any workshop.

9. Technician-II: Rs 380-12-500-EB-15-560.

Qualifications: B.Sc. Degree or LEE or equivalent with a Diploma or 3 years experience in Air-conditioning and Refrigeration.

10. Instrument Technician (Temporary) Rs. 480-25-780-30-900.

Qualifications: (i) M.Sc. Physics, 1st Class with Electronics specialisation and (ii) Experience of designing and fabricating instruments such as VTVM, Timing and pulse circuits.

Age: Below 30 year as on 1-7-1978.

11. Horticulturist: Rs 700-30-1000-40-1200.

Qualifications: (i) B.Sc. Degree in Agriculture or the Diploma in Agriculture of any recognised College of Agriculture; AND (ii) Post-graduate degree in Agriculture; AND (iii) Evidence of ability to plan and organise with experience in agricultural Extension or Community Development.

12. Security Officer: Rs. 320-14-460 15-580.

Qualifications: Graduate with experience in NCC/Home Guards. **Age:** Below 30 years as on 1-7-1978.

13. Security Guards: Rs 250-10-430. (Reserved SC-1: ST-1: BC(A)-1. BC(B)-1; & Open-3).

Qualifications: SCC/Matric with experience in NCC/Home Guards. **Age:** 28 years as on 1-7-1978.

14. Garden Supervisor: Rs 410-18-590-20-750.

Qualifications: A Diploma in Horticulture and 5 years of experience in the Maintenance of Gardens. **Age** Not more than 28 years as on 1-7-1978.

SI Nos. 1 to 9 carry UGC Scales of pay and the remaining posts carry University Scales of pay. The age limit will be relaxed upto 5 years in respect of SC/ST candidates. They should produce Caste Certificate alongwith the application. Prescribed applications forms and details of the advertisement can be had from the Registrar, S.V. University, Tirupati 517502 by sending a crossed Indian Postal Order for Rs. 2/- drawn in favour of the Finance Officer, S.V. University payable at the S.V.U. Campus Post Office, Tirupati or by State Bank of India/Andhra Bank challan or Demand Draft for Rs 2/-. The Syndicate reserves the right to fill in or not fill in any or all of the above posts without assigning the reason therefor and the right to consider and appoint, if found fit by the Selection

Committee, those who have not applied.

REGISTRAR

HARYANA AGRICULTURAL UNIVERSITY

Advertisement No. 7/78

Applications are invited for following posts. High start outstanding qualifications, experience and achievements. Benefits of Contributory Provident Fund and leave etc. according to University Rules. Applications of the candidates already in service must reach through proper channel upto the fixed date. Applications on prescribed form (obtainable free by sending self-addressed unstamped envelope size 23 x 10 cms. to Assistant Registrar (R), HAU, Hissar) accompanied by prescribed fee of Rs 10/- in the form of Crossed Postal Order in the name of Assistant Registrar (R), HAU, Hissar payable at Hissar Post Office, should reach Registrar by 7.11.1978. The envelope containing application must be superscribed as "APPLICATION FORM FOR THE POST OF _____".

1. Dean College of Sports : (Rs 1500 60-1800-100-2000-125/2-2500 with benefit of rent-free accommodation) **Essential:** i) Atleast Second class B.A./B.Sc./B.P.Ed. followed by atleast Second class Master's degree in Physical Education. ii) A doctorate degree in Physical Education. iii) Experience of teaching degree classes for at least 10 years. iv) Administrative experience as Principal/Vice-Principal/Senior Faculty Member in a College of Physical Education or in any senior position in an Institution of higher education or Head of a Teaching Department of Physical Education of a University. **Desirable:** i) Research publications. ii) Experience in competitive sports participation at the College/University/State level.

2. Senior Cotton Breeder: (Rs 1500-60-1800-100-2000-125-2/2500): i) Second class B.Sc. (Agr.)/B.Sc. ii) Ph.D. in Genetics/Plant Breeding. iii) Ten years experience of teaching/research/extension education in Plant Breeding/Genetics on Cotton Crop out of which atleast 5 years should be as Associate Prof. or of equivalent rank.

3. Professor of Livestock Production and Management : (Rs 1500-60-1800-100-2000-125/2-2500): **Essential:** i) Second class B.VSc./B.Sc.(An.Sci.)/B.Sc. (Dairying)/B.Sc. (Agr.) ii) Second class M.Sc. (Ag.)/M.Sc(Dairying)/M.Sc. in any branch of Animal Sciences. iii) Ph.D. in Livestock Production. iv) Ten years' experience of research/teaching in Animal Sciences/Management of large Animal Research establishment, out of which atleast five years should be as Associate Professor or equivalent rank. v) Evidence of having conducted independent research in any field of Animal Science/Dairy Science in the form of published work in the scientific journals or repute.

4. Librarian: (Rs 1500-60-1800-100 2000): **Essential:** i) Atleast a high second class Master's degree in Art/

Science/Agriculture and atleast high second class degree in Library Science. ii) Recognised research work leading to a doctorate degree or equivalent published work. iii) Atleast 10 year's experience in a responsible professional capacity in a University Library. Desirable: Ph.D. in Library Science.

5. Disease Investigation Officer (Leave Vacancy): (Rs 1200-50-1300-60-1900): i) Second class B.V.Sc. degree. ii) Ph.D. degree in Epidemiology, Pathology, Bacteriology, Preventive Medicine or Parasitology. iii) Five years experience of research/teaching/extension/investigation of Livestock and poultry diseases.

6. Scientist (Pathology): (Rs 1200-50-1300-60-1900): Essential: i) Second class B.V.Sc. & A.H./B.V.A.Sc. ii) Second class M.V.Sc. in Vety. Pathology, iii) Ph.D. in Vety. Pathology. iv) Five years experience of teaching/research/extension in the discipline. Desirable: Research experience of working on toxoplasmosis and/or blood infectious disease of domestic animals.

7. Associate Professor of Vegetable Crops: (Rs 1200-50-1300-60-1900): i) 2nd class B.Sc. (Agri.). ii) 2nd class M.Sc. Olericulture/Horticulture with specialization in Veg. Crops. iii) Ph.D. in Olericulture/Horticulture with specialisation in Vegetable Crops. iv) Five years experience of Teaching/Research/Extension in Vegetable Crops.

NOTE : Those who applied earlier, need not apply again.

8. Associate Professor Agronomy (Weed Control): (Rs 1200-50-1300-60-1900): Essential: i) 2nd class B.Sc. (Ag.). ii) 2nd class M.Sc. (Ag.) in Agronomy. iii) Ph.D. Agronomy iv) Five years experience of teaching/research/extension in Agronomy, preferably in weed control as evidenced by published work.

9. Economic Botanist (Gram): Rs. 1200-50-1300-60-1900): i) Second class B.Sc. or B.Sc. (Agr.). ii) Second class M.Sc. (Agr.) in Plant Breeding/Genetics iii) Ph.D. in Plant Breeding/Genetics. iv) Five years' experience of research/teaching/extension in Plant Breeding/Genetics preferably on Gram/Pulses crops.

10. Associate Professor of Extension Education: (Rs 1200-50-1300-60-1900): Essential: i) Second class B.Sc. (Agr.)/B.V.Sc./B.Sc. (An.Sc.)/B.Sc. (Home Science). ii) Second class M.Sc. in Extension Education. iii) Ph.D. in Extension Education. iv) Five years experience of Extension Education in teaching/research/field work. Desirable: i) Training in Agril. Economics/Rural Sociology. ii) Rural background.

11. Scientist (Plant Breeding): (Rs 1200-50-1300-60-1900): i) Second class B.Sc. (Ag.)/B.Sc. ii) Second class M.Sc. in Plant Breeding/Genetics. iii) Ph.D. in Plant Breeding/Genetics. iv) Five years experience of research/teaching in Plant Breeding/Genetics. Desirable: Experience in Guar research.

12. Scientist (Entomology) : (Rs 1200-50-1300-60-1900): i) Second class B.Sc. (Agr.)/B.Sc. ii) Second class M.Sc. (Agr.) in Entomology. iii) Ph.D. in Entomology. ii) Five years experience of research/teaching/extension in Entomology preferably in Pulses.

mology preferably in Pulses.

13. Scientist (Chemistry): (Rs 1200-50-1300-60-1900): i) Second class B.Sc./B.Sc. (Agri.). ii) Second class M.Sc. in Biochemistry/Agril. Chemistry. iii) Ph.D. in Biochemistry/Agril. Chemistry/Organic Chemistry. iv) Five years experience of research/teaching in the above fields. v) Analytical experience of quality Synthesis work.

14. Associate Professor (Animal Nutrition): (Rs 1200-50-1300-60-1900): Essential: i) Second class B.Sc. (Ani. Sc.)/B.V.Sc. / B.V.A.Sc. / B.Sc. (Agr.)/B.Sc. Dairying (Dairy Husbandry). ii) Second class M.Sc. in Animal Nutrition/Animal Physiology. iii) Ph.D. in Animal Nutrition/Animal Physiology. iv) Five year's experience of teaching/research/extension in Animal Nutrition or allied fields. Desirable: Experience in energy metabolism environmental physiology.

15. Microbiologist: (Rs 1200-50-1300-60-1900): i) Second class B.Sc. or B.Sc. (Agri.). ii) Second class M.sc. in Microbiology/Biochemistry/Agri. Chemistry or Allied field. iii) Ph.D. with specialisation in Microbiology. iv) Five years research experience in any of the above fields.

16. Senior Administrative Officer: (Rs 1100-50-1600): Essential: i) Second class graduate in any discipline from any recognised University. ii) Ten years office experience of a University or any other teaching/research institution or Central/State Govt. office or Central or State Govt. undertaking, out of which atleast 5 years should be in a supervisory capacity of not less than class-II rank or equivalent of the State Govt. Desirable: i) Post-graduation qualifications. ii) Experience of working in an Agricultural University.

17. Assistant Ichthologist : (Rs 700-40-1100-50-1300-Assessment-50-1600) : i) Second class B.Sc./B.V.Sc./B.Sc. (Ani. Sc.)/B.Sc. (Agri.). ii) Second class Master's degree in Zoology/Fish Biology. iii) Ph.D. in Zoology/Fisheries or three years experience of teaching/re-

search in Fish/Biology/Fisheries Rearing of Fishes in the capacity of research associate or Lecturer or equivalent. Desirable: Advanced training in Fish Biology/Fisheries.

18. Assistant Professor (Statistics): (Rs 700-40-1100-50-1300-Assessment-50-1600): i) Second class B.Sc. (Agr.)/B.A./B.Sc. (Mathematics) ii) Second class Master's degree in Statistics or 2nd class Master's degree in Mathematics followed by diploma in Statistics from I.A.R.S. or ISI/training in computer programming. iii) Ph.D. in Mathematics/Statistics or 3 years experience in research/teaching to undergraduate and post-graduate classes in statistics/computer programming for biological experiments.

19. Assistant Research Officer (Bact. & Hygiene): (Rs 700-40-1100-50-1300-Assessment-50-1600): Essential: i) Second Class B.V.Sc./B.V.A.Sc. ii) Second class Master's degree in Vety. Microbiology. iii) Three years experience as research/Extension/Teaching Associate or Lecturer or equivalent on bacteria of Vety. Importance, preferably Mycoplasma OR Ph.D. in Vety. Bacteriology. Desirable: Training in Immunology and seriology dealing with avian Mycoplasma.

Note: 1. For Posts at Sr. Nos. 1 to 3, 7 to 15, 17 & 18, one or more of the Essential qualifications relaxable for candidates with outstanding attainments/experience.

2. For posts at Sr. Nos. 5, 6 & 19, qualifications are relaxable if persons with requisite experience/qualifications are not available.

3. For posts at Sr. Nos. 2, 5 to 12 & 14, special weightage will be given to extension experience possessed by the candidates.

4. For posts at Sr. Nos. 17, 18 & 19, the persons who do not possess Ph.D. at the time of their selection, if selected, will have to obtain Ph.D. degree within a period of five years failing which their future increments may be stopped

REGISTRAR

THE UNIVERSITY OF KASHMIR, SRINAGAR

Notice

Applications in the prescribed forms are invited for the following posts which should reach the under signed by or before 25th October, 1978.

POSTS

S. No.	Department	Professor	Reader	Lecturer
1.	Chemistry	x	1	1
2.	Commerce	x	x	1
3.	Economics	1	x	1
4.	Education	x	x	1
5.	English	x	x	2(OneTemp.)
6.	French Language	x	x	1
7.	Hindi	x	x	2
8.	Mathematics	x	1	x
9.	Persian	x	x	1
10.	Political Science	1	1	1 (Temp.)
11.	Physics	x	1	x
12.	Zoology	x	1	1

The prescribed application forms can be had from the Registrar, University of Kashmir, Srinagar on cash payment of Rs 6/- or by sending a crossed postal order drawn in favour of the Registrar cashable at Srinagar Post Office along with a self addressed envelope (5" x 11") with the necessary postage.

The details in respect of essential and desirable qualifications for the posts can be had from the office of the undersigned.

Saif-ud-Din Soz
REGISTRAR

S.N.D.T. WOMEN'S UNIVERSITY

1. Nathibai Thackersey Road
Bombay 400 020

Applications are invited on prescribed forms (8 copies) available from the University Office on payment of Rs. 5/- (by M.O. or Cash) for the post of LECTURER IN EDUCATION to be filled in at the S.N.D.T. College of Education for Women, Poona, so as to reach the undersigned not later than **October 28, 1978.**

Qualifications

(i) A consistently good academic record with at least first or high second class at the Bachelor's and the Master's Degree in Education or equivalent degrees of a foreign University. (ii) An M.Phil. degree or recognised degree beyond Master's level or published work indicating the capacity of a candidate for independent research work.

Note

Provided that if a candidate possessing the qualifications as at (ii) above is not available or not considered suitable the college, on the recommendation of the Selection Committee may appoint a person possessing a consistently good academic record (i.e. a high second class at B. Ed. & M.Ed.) on the condition that he/she will have to obtain an M.Phil. degree or a recognised degree beyond Master's level within the five years of his/her appointment, failing which he/she will not be able to earn future increment and his/her services will be liable to be replaced by recruiting a person possessing the prescribed qualifications.

Salary Scale

Rs. 700-40-1100-50-1300-Assessment-50-1600 plus admissible allowances (Total initial emoluments about Rs. 1100/- per month).

Note

(a) Only suitable candidates will be called for interview.

(b) Other things being equal preference will be given to candidates from Scheduled Castes/Scheduled Tribes/Other Backward Communities.

(c) Details of additional requirements will be available with the application forms.

(d) Higher starting salary may be considered in exceptional cases.

(e) The post will be filled in according to the medium requirements, namely, Marathi or English. Selected candidates if not conversant in Marathi will have to acquire proficiency in Marathi during probation period.

(f) The candidate should be able to guide students in teaching of either History/Commerce/Economics/ Gujarati subjects.

(Smt.) Kamalini H. Bhansali
REGISTRAR

INDIAN INSTITUTE OF TECHNOLOGY, KHARAGPUR

Advertisement No. R/15/78

Applications are invited for the undermentioned posts for the different Sponsored Schemes at the Indian Institute of Technology, Kharagpur, West Bengal.

1. Radar and Communication Centre

(a) Principal Scientific Officer (2

posts)—Scale of Pay: Rs. 1500-60-1800-100-2000/- plus D.A. as per rules.

Age: Preferably below 50 years.

Qualifications and Experience

Essential

(i) M. Tech and/or Ph.D degree with First Class at the Bachelor's degree level in Electronics & Communication Engg or equivalent with seven to ten years' experience in research and/or teaching.

(ii) Specialised knowledge in the field of Microwave Antennas/ Phased Array Antennas/Electromagnetics.

Desirable

Experience in guiding research. Corporate membership of a recognised Institution, teaching experience at post-graduate level.

(b) Sr. Scientific Officer (5 posts)

Scale of Pay: Rs. 1100-50-1600/- Plus D.A. as per rules.

Age: Preferably between 30 and 45 years.

Qualifications & Experience

Essential

First Class B. Tech degree in Electronics & Communication Engineering/M.Sc. in Radio-Physics or equivalent with 7 years experience in research/professional field.

(ii) Specialised knowledge in Electromagnetics/Phased Array/Microwave Antennas.

Desirable

Experience in carrying out research, corporate membership of a recognised institution, Doctorate degree in field of specialisation.

(c) Junior Scientific Officer: (5 posts)

Scale of Pay: 700-40-900-EB-40-1100-50-1300 Plus D.A. as per rules.

Age: Preferably between 25 and 38 years.

Qualifications & Experience

Essential

(i) First Class B. Tech degree in Electronics & Communication Engineering/M.Sc. in Radio-Physics or equivalent with three years' experience in research/professional field.

(ii) Specialised knowledge in any one of the following:

- (a) Microwave Antennas
- (b) Phased Array Antennas.

Desirable

About 2 years' experience in research/ in professional field.

2. Agricultural Engineering Department

(a) Senior Research Officer—(3 posts)

Scale of Pay: Rs. 1100-50-1600/- Plus D.A. as per rules.

Age: Below 40 years.

Qualifications & Experience

Essential

(i) Master Degree in Agricultural Engg. with specialisation in Farm Machinery and Power or equivalent postgraduate qualification.

(ii) 5 years' research/field experience in Farm Machinery and Power.

Desirable

(i) Doctorate in Agricultural Engineering.

(ii) Knowledge of French/German/Russian languages.

(iii) Knowledge of Modern methods of investigation in Farm Machinery and Power Particularly

with reference to the energy measurements in various Agricultural operations.

(b) Junior Engineer—(1 post)

Scale of Pay: Rs. 700-40-900-EB-40-1100-50-1300- Plus D.A. as per rules.

Age: Below 40 years.

Qualifications & Experience

Essential

Masters' degree in Agricultural Engg. with 2 years of research experience in farm power and machinery.

Or

First Class Bachelor's degree in Agricultural Engineering with 5 years of research experience in Farm Power and Machinery.

Desirable

Doctorate degree in Agricultural Engineering,

(c) Junior Research Officer (4 posts.)

Scale of Pay : Rs. 700-40-900-EB-40-1100-50-1300/- plus D.A. as admissible.

Age : Below 40 years.

Qualifications & Experience

Essential

Good Academic record with Master's degree in Agricultural Science with specialisation in plant physiology or taxonomy/Agricultural Chemistry or Chemistry with specialisation in Analytical chemicals.

Desirable

Doctorate in appropriate branch and knowledge of weeds and weedicides/analysis of agricultural chemicals.

3. Geology & Geophysics Department

Junior Scientist—1 post.

Pay : Rs. 1250 (fixed) p.m.

Qualifications

M.Sc. degree in Earth Sciences with at least 7 years of professional experience in mineral exploration,

4. Department of Architecture & Regional Planning

Junior Research Officer—1 post.

Pay : Rs. 1250/- (fixed) p.m.

Age : Below 40 years.

Qualifications

Essential

(i) A good Master's degree in City/Regional Planning or Architecture or M.Phil/Ph.D. in Regional Development and Planning.

(ii) Enough evidence of independent research and publications.

Desirable

Experience of working under a Development/Planning authority at a responsible position,

5. Department of Electronics & Electrical Comm. Engg.

Project Officer—1 post.

Pay: Rs. 1000/- (fixed) p.m.

Qualifications

M.Tech in electronics or equivalent. Two years experience in the field of computers/pattern recognition/automatic control.

Applications on plain paper stating Name, Father's Name, Present and Permanent Address, Age, Qualifications and Experiences in details, Nationality, etc. for the aforesaid post should reach the Heads of the Department concerned IIT, Kharagpur by the 30th October, 1978.

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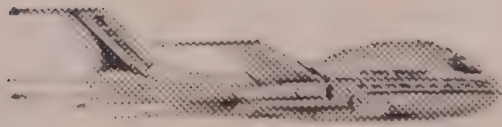
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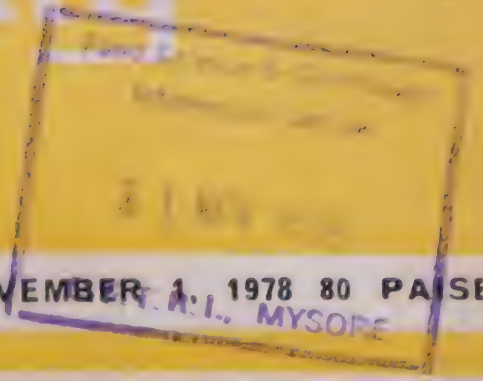
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The Prime Minister, Shri Morarjibhai Desai, delivering the convocation address at Gujarat Vidyapith. Shri Ramlal Parikh, M.P.; Shri Dahyabhai Naik, Vice-Chancellor; Smt. Shardaben Mukharji, Governor of Gujarat and Shri Babubhai Patel, Chief Minister of Gujarat are also sitting with the Prime Minister.

INDIAN INSTITUTE OF TECHNOLOGY, BOMBAY

P.O. I.I.T. POWAI,
BOMBAY-400 076

Advertisement No. 940/78

Applications are invited for the faculty positions of Professor, Assistant Professors and Lecturers in the following areas in the department of the Institute. Applicants should give an account of their academic and professional record and list of research publications. A candidate may be considered for a lower position if not found suitable for the post applied for.

Some posts of Lecturer are reserved for candidates belonging to Scheduled Caste/Scheduled Tribe community.

1. Professor

Scale of Pay Rs. 1500-60-1800-100-2000-125/2-2500.

2. Assistant Professor

Scale of pay Rs. 1200-50-1300-60-1900.

3. Lecturer

Scale of pay Rs. 700-40-1100-50-1600.

1 PROFESSOR: CIVIL ENGINEERING DEPARTMENT

Qualifications, Experience & Field of Specialisations

Applicant should have consistently excellent academic record with Doctorate/Master's degree or equivalent post-graduate qualification in Air Photo-Interpretation/Remote Sensing from a recognised University/Institute with a basic degree in Civil Engineering. Minimum 10 years experience in a responsible capacity in teaching/research/industry. Professional/Scientific work of outstanding merit and experience of carrying out independent research and guiding research highly desirable.

2. ASSISTANT PROFESSOR & LECTURER : CHEMICAL ENGINEERING DEPARTMENT

Qualifications, Experience & Field of Specialisations

Applicant should have consistently excellent academic record with Doctorate/Master's degree in appropriate field of study in Engineering/Technology from a recognised University/Institute. Experience of carrying out independent research and guiding research desirable.

Experience

Minimum 5 years' experience in teaching/research/industry for the post of Assistant Professor.

Minimum 2 years' experience in teaching/research/industry for the post of Lecturer.

Preference will be given to candidates with research experience in Process Development including modelling, Simulation and Computer aided design.

3. ASSISTANT PROFESSOR & LECTURER: DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES

Qualifications, Experience & Field of Specialisations

Qualifications

Applicant should have consistently excellent academic record with Doctorate/Master's degree in the appropriate field from a recognised University/Institute. Experience of carrying out independent research and guiding research desirable.

Experience

Minimum 5 years' experience in teaching/research for the post of Assistant Professor.

Minimum 2 years' experience in teaching/research for the post of Lecturer.

Field of specialisation for the posts of Assistant Professor and Lecturer

(i) Economics

Economic Planning particularly Regional Planning and Development; Econometrics and International economics.

(ii) English

Teaching English to student backward in English; Linguistics and Creative Literature dealing with the effects of Science and technology, on 20th Century Life.

Field of specialisation for the post of Lecturer

(i) Philosophy

Symbolic Logic; Philosophy of Science; History of Science; Contemporary Movements in Philosophy and Indian Philosophy.

4. ASSISTANT PROFESSOR & LECTURER: DEPARTMENT OF MATHEMATICS

Qualifications, Experience & Field of specialisations

Qualifications

Applicant should have consistently excellent academic record with Doctorate/Master's degree in the appropriate field from a recognised University/Institute. Experience of carrying out independent research and guiding research desirable.

Experience

Minimum 5 years' experience in teaching/research/industry for the post of Assistant Professor.

Minimum 2 years' experience in teaching/research/industry for the post of Lecturer.

Field of specialisations for the posts of Assistant Professor and Lecturer

(i) Statistics and Operation Research.

(ii) Computer Science and Numerical Analysis.

5. LECTURER: ENVIRONMENTAL SCIENCE

Qualifications, Experience & Field of specialisation

Applicant should have consistently excellent academic record with Doctorate degree in Physics or Chemistry from a recognised University/Institute with two years research and teaching experience in Air Pollution Monitoring and Control and related fields.

6. LECTURER: INDUSTRIAL DESIGN CENTRE

Qualifications, Experience & field of specialisation

Degree in Mechanical Engineering followed by post-graduate qualification in Ergonomics/Humanfactor engineering with not less than two years experience in Ergonomics.

The job involved the development of applied Ergonomics Laboratory and teaching Ergonomics to P.G. Students of design.

The posts are permanent and carry allowances such as D.A., C.C.A., H.R.A. as per rules of the Institute which at present correspond to those admissible to Central Government employees stationed at Bombay. Applications should be made on the prescribed

form obtainable free of charge from the Registrar of the Institute by sending a self-addressed envelope of 25 cm x 10 cm size. Indian candidates abroad may apply on plain paper in duplicate. Candidates employed in Government/Semi-Government Organisations or Educational Institutions should apply through proper channel. Completed applications should reach the Registrar, I.I.T. Powai, Bombay-400 076 by 30th November 1978.

INDIAN INSTITUTE OF TECHNOLOGY, BOMBAY-76

P.O. I.I.T. POWAI, BOMBAY-400076
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Applications are invited for the following permanent posts at this Institute in the prescribed form obtainable from the Registrar, Indian Institute of Technology, P.O. I.I.T. Powai, Bombay-400076 on request accompanied by self-addressed envelope (23 cm x 10 cm). Persons employed in Government/Semi-Government Organisations or Educational Institutions must apply through proper channel. Completed applications together with the requisite copies of certificates and crossed postal order for Rs. 7.50 (Rs. 1.88 for SC/ST candidates) as application fee should be sent to the Registrar, Indian Institute of Technology, P.O. I.I.T. Powai, Bombay-400076 on or before 20th November, 1978. The posts carry allowances such as D.A., H.R.A., C.C.A. etc. as per rules of the Institute. Candidates called for interview will be paid Second Class Rail Fare from the place of their residence to Bombay and back by the shortest route.

1. **Ceramic Designer:** Scale of Pay Rs. 700-40-900-EB-40-1100-50-1300.

2. **Assistant Workshop Superintendent** Scale of Pay Rs. 700-40-900-EB-40-1100-50-1300

3. **Foreman:** Scale of Pay Rs. 550-25-750-EB-30-900.

QUALIFICATIONS & EXPERIENCE

1. **Ceramic Designer: Industrial Design Centre**

Degree/Diploma in Ceramic Design from a recognised Institute. 5 to 7 years experience in Industry/teaching. Educational qualification relaxable in case of deserving candidates with exceptional design talents and experience in designing and developing consumers' and utility products in Ceramic.

2. **Assistant Workshop Superintendent**

Degree in Mechanical Engineering or equivalent. Four years experience in maintenance and erection of laboratories/workshop/plants. Should have knowledge in regard to purchase, storage and issue of engineering materials. Should be able to guide practical training of students.

3. **Foreman: Industrial Design Centre**

Diploma in Mechanical/Electrical Engineering with 7 years workshop experience/regular apprenticeship for 4 to 5 years in an industrial establishment of repute plus 7 years experience in an industrial establishment.

Desirable

Teaching experience, ability to prepare work estimates, ability to organise and control and familiarity with the working in metal, wood and plastic workshop.

UNIVERSITY NEWS

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*Opinions expressed in the articles
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Hony. Editor : ANJNI KUMAR

University Libraries in India

M.L. Chattkara*
Krishan Gopal

Introduction

The role of a Library in a university system was described by the University Grants Committee of the United Kingdom, in its report of 1921 as: "The character and efficiency of a university may be gauged by its treatment of its central organ — the Library. We regard the fullest provision for Library maintenance as the primary and most vital need in the equipment of a university". And this stands good even today.

The university system comprising students, faculty, library and administration components may be viewed as an entity with four functional elements viz resource input, demand element, operations and programmed output.

The objective of the University Education and Research is the programmed output, and output depends on the quality and quantity of the input and its proper utilisation. For that purpose the fulcrum of the operations of the system—the Library—needs to be well geared. The operations of the university can't be operative without the Library.

The systematization and planning in university Libraries is called upon by the proliferation of the recorded knowledge in quantity and quality at an acceleration that makes it practically impossible for any person to keep track of it without the help of an organized agency—the Library which acquires, organises stores and makes available the bits and bats of the communication media to the striving—for knowledge university community.

Perspective

The impetus to the development of academic libraries in India was provided by Dr S.R. Ranganathan. The take-off initiated by Dr Ranganathan could not keep pace with the advancement of the present into the past and university libraries, if not in worst, are in bad situation. It is the most important but always neglected child of the education planners.

The development of the university and its component requiring the library services during the past ten years are as follows:

	1965-66	1975-76	% increase
Number of Univ.	80	114	44.5%
Student Enrolment	1,30,332	2,84,100	117%
Teaching Staff	9,271	15,628	68%

The decade from 1965-66 to 1975-76 if taken as base, we expect the following data, if not more, in 1990:

Universities	164
Student Enrolment	6,22,000
Teachers	26,200

*Jawaharlal Nehru University, New Delhi.

For the above mentioned community, the top elite of the nation, libraries are to plan their requirements of Collection, Staff, Building and Readers Services.

Organisation of these constituents of the university library is to depend on the services required and provided. And for the proper development and organization we need some standards.

Standards

In 1957, University Grants Commission (India) set up a Committee under the chairmanship of Dr S.R. Ranganathan to make recommendations regarding various aspects of university library viz staff, services, finances required etc. The report of the Committee submitted in 1959 and published in 1965 has not produced the desired results. Whatsoever little was implemented is being reversed by the authorities. A sad state of affairs.

The future programme will vary from library to library. For every library it will depend upon its anticipated programme of activity and future of clientele, but still it is possible to formulate 'Standard Norms' for performance of jobs and activity with necessary provision for adjustment at individual library level.

So, the first and foremost task before the profession is to set up the norms not in fifteen years but within two or three years, say, by the end of fifth five year plan.

With the help of norms, every university library should formulate its own plan keeping in view their requirements. The framework in general may be as follows :

Collection

The gigantic output of the scholarly publications both in book and articles form and in various other modes of recording and in a variety of languages, is an immediate concern of every university library.

To this is added to constant increase in the cost of published material. Financial standards for the university library have to be considered against this background. As finances and means of procurement are the constant constraints on the acquisition of material, every library should have its acquisition policy to have judicial selection. The acquisition policy may be within the following framework:

- (i) The prevailing system in some universities of authorising some faculty members to do selection should be dispensed with immediately.
- (ii) The induction of red tapism in the procurement of reading material (e.g. STC) should not be allowed at any cost. State Trading Corporation has already proved a white elephant.
- (iii) There should be a general agreement between the book-sellers associations and the educational authorities. Within the framework of the agreement, the libraries should be free to operate. The system of calling quotations for reading material should be shelved.
- (iv) University libraries should be made depository of those union and state government publications as required by the library.
- (v) Budgetary provision in the case of book-grants needs a characteristic change. The fear

of the lapse of grant at the end of the financial year pressurizes the librarians to push on their selection. It is the misutilization of the funds of a poor country. To stop this misuse, all book grant should be deemed as non-lapsable.

- (vi) The Department-wise division of the book-grant is a hinderance in the healthy development of the library collection. For a judicious selection and procurement there should be a 'Selection Cell' within the library. The Selection cell should consult the Faculty members, in the difficult and border line cases.
- (vii) The counter-part of the Acquisition-Weeding out has been totally neglected in the libraries in India. There should be a policy to remove the books which are not being used from the stacks. A survey under study by the authors reveals that between 60-70 per cent of the general books in an open-access system have never been issued out during last five years.

STAFF

Status & Salary

To procure, preserve, and retrieve the information university libraries need a staff possessing the education and calibre to deal with and to understand that material. Added to this is the development of information system requiring constant research.

UGC Committee (1957) suggested that the education and salary of the library staff should be equivalent to the corresponding teaching staff. This has been implemented by the Central Universities in the case of Professional Seniors & Juniors, but Professional Assistants were neglected. State universities lagged far behind. The UGC Committee did not make any recommendation regarding supporting staff.

Now, it seems that authorities are bent upon disturbing the prevailing parity. In case it is done, it will make libraries Routine-Oriented, instead of Research-Oriented.

A number of seminars have been held regarding status and salary of the staff of a university library. Their recommendations may be rationalized.

An effort to equate the university library staff with that of the government department libraries is in the offing. It has retrograde effect on the academic libraries. Departmental libraries and academic libraries have different roles to play. They function in different atmospheres. There can't be an equation.

Requirements

UGC Committee (1957) suggested a Staff-Formula. The developments of the last two decades require that staff-formula be remodelled. Indoc has already done some work in this direction.

It is high time that standards of staff requirements for various sizes of university libraries are laid down. The essential aspect of the standards is that the prevalent practice of appointing a professor as honorary librarian should be stopped immediately.

Training

Librarianship today requires a continuous research in methodology. To keep abreast with the latest

developments library staff needs refresher courses i.e. in-service training. The provision for in-service training should be made by every university library in collaboration with the Departments of library science.

BUILDING

There has been a uniform failure in the quality as far as the expenditure on library buildings is concerned—a result of ad hoc decision making. Sometimes the librarians are not consulted even. The guidelines on the functional aspects of the library building are not available. To get out of this miserable state of affairs there should be a permanent panel on library buildings and whenever and wherever required, suggest some substantial extension of the existing buildings.

Any how, the following norms must be kept in view while designing university libraries.

- (i) Library should be centrally located at the campus.
- (ii) Summer room should be provided within the library.
- (iii) Reader's seating arrangement should be near the books.
- (iv) Air-conditioned space for reprographic equipment and Microforms.
- (v) Sound-Proof rooms for use of tapes and records.
- (vi) There should be separate space for research scholars.
- (vii) Sufficient space for library staff.
- (viii) Auxiliary services like coffee house etc should be provided.

Furniture and fittings

Indian Standards Institute provided the guidelines in 1960 vide IS-1329 (Part I) (1961). It is being revised now. We should wait for the final outcome.

Finances

The commoner says : Whenever the funds are cut education is the first affected party. And within the education it is the library. The educationist should come forward to change this trend. The adequate recurring and non-recurring grants should be made available.

Recurring

- (i) A fixed % of the university budget should be set apart for libraries (say 10%).
- (ii) Strict allocation by department-wise is not in the best interest of the library.
- (iii) For proper utilization of the grants the Book Budget may be made non-lapsable.

Non-recurring

For any new department or project started, the libraries should be provided with non-recurring adequate grants.

Readers services

The collection, staff and building of a university library are mere means to an end the service to the university community. The users are the faculty members, Post doctoral, Ph.D. and Post Graduate and Undergraduate students.

A university library is expected to provide following specialized services.

Textbook service

The text books are required at the graduate and the postgraduate level only. As the number of students using this collection is more than any other category, it is a maximum used collection. To cope with the demand (i) The Book Bank Scheme (already introduced) should be expanded. (ii) The university libraries should explore the possibility of having a book shop at the campus near the library. The shop should provide books to the students at rent against their security deposits.

Information service

Most of the current material required by Ph.D and post-doctoral students appears in the periodical literature including news papers. It is not possible for any individual to keep track of it. The documentation becomes essential. In addition to indexing and abstracting, the readers should be apprised of the material of their interest i.e. libraries must have current awareness services. It should be done on Co-operative basis.

Reprography

The proliferation of literature demand that there should be some technique to produce the copies of the desired topic; various types of Photo copying machines have been developed. It may not be possible for all university libraries to have these gadgets. But there is necessity that every reader is served with this facility. Here the library co-operation will play a vital role.

Translation service

Knowledge explosion has been taking place in a variety of languages. No scholar can master all the languages but every scholar has the right to know what has been communicated by others of his field—translation is the reply. Indoc takes up the job in the field of sciences. The needs of the university community are of more urgent nature. They should have their own unit and this too can be achieved only through co-operation.

Inter-library co-operation

No single library can meet the demands of its clientele singularly. Inter-Library Co-operation steps in. It is a major aspect that should be developed during the coming fifteen years. Thorough inter-library co-operation, theoretically is possible in every field. We list below where it is must and where possibilities should be explored immediately:

- (i) Inter-Library Loan
- (ii) Reprography
- (iii) Information Service
- (iv) Translation

Periphery of the libraries and the communication systems available will determine the success of the system.

The libraries within the viable area say radius of 150 km may think of developing the Inter-Library
[(continued on page 1240)]

Concept of College Development Council in an affiliating University

L. P. Vaish*

With the expansion of education, the educational needs still remained unfulfilled. The explosion of population in a vast country like India necessarily, amongst others, creates the problem of imparting education to the eligible both at the secondary level and at the level of the university. The growing demand of the young for higher education resulted in the starting of more and more new colleges and institutes of higher learning as also more universities. The figures within the limited means, could compare favourably with any developed and advanced country. In respect of higher education, quality has to get a higher priority, particularly in a developing country.

In a letter addressed to the universities, the Secretary, University Grants Commission has explained the view-point of the U.G.C. into the matter. "The U.G.C. has always been of the view that quality of higher education in India will largely depend on the standards maintained by colleges which account for nearly 90% of the students at this stage."

"The Commission is also aware that the facilities available in most of the 3000 colleges which are eligible to receive assistance from it needs to be substantially improved for maintaining proper standards and a small number of good colleges available in the country are mostly concentrated in a few cities and towns. As a consequence, adequate facilities for higher education of good quality are not available even throughout the country particularly in rural and other backward areas. Apart from the need to correct the regional imbalance as contained in the National Policy on Education, there is also need for ensuring quality of educational opportunities, as also for encouraging access of higher education to the socially deprived sections of the society".

On a suggestion received from the U.G.C. certain universities had set up "College Development Councils" under the Chairmanship of the Vice-Chancellors. The U.G.C. again conveyed the recommendations of the Standing Committee of the Commission to the effect that with a view to developing the colleges effectively, the U.G.C. would give cent per cent assistance for three years in the first instance for establishing the office of the College Development Council (CDC) which shall be responsible to the Vice-Chancellor and which would send periodic reports to the Commission about the impact of the Commission's grants. The Commission has specified the area of work of the Council vis-a-vis the Colleges. As a result most of the affiliating universities have now constituted College Development Councils. The CDC is supposed to have a membership of approximately

30 members chosen from various categories viz. ULP coordinators, college principals, some lecturers from the colleges, a couple of university professors and representatives of the Government Education and Finance Departments etc.

There are several problematic dimensions of the pattern of higher education in India which need careful analysis and understanding. Universities and Colleges are the formal-institutional mechanisms through which higher learning and cultivation of knowledge become possible. The standards of education vary from university to university, from college to College and between university and college. Certain universities have acquired greater reputation, some have lost it, some have yet not acquired any. Nevertheless university formally determines the entire academic pattern of teaching and evaluation for the colleges also. The affiliational relationship between universities and colleges has to be so structured that there is greater mutuality of academic interaction and in this process universities ought to provide appropriate leadership.

There is a great deal of universality in the observation that as the residential character of university expands the affiliating colleges and their place in the main university tend to be neglected. Consequently number of issues crop up. The main thrust of the 'Council is thus:

- (1) To effectively coordinate academic, administrative and financial aspects of relationship between college, university, State and U.G.C. with a view to eliminating all organizational hurdles so that speedier sound decisions become feasible.
- (2) To help the colleges in improving standards of their education by providing all academic and resource assistance from the university.
- (3) To eliminate the gaps of teaching standards between colleges and between university and colleges through institutional arrangements—such as organization of vacation-schools, exchange of teachers, ULP Projects, COSIP, COHIP and similar programmes.
- (4) To identify problems of colleges by preparing profile and perspective report of each college. This would help in categorization of colleges on certain academic-scale so that priorities can be fixed accordingly.
- (5) To replan the pure affiliating work of University so that the 'Council' could handle the affiliating work directly and thereby reduce the duplication and burden of work on the main university.

The University of Rajasthan was established in the year 1947 as an affiliating University. Among

*Coordinator, College Development Council, University of Rajasthan.

the powers of the University as provided in "The University of Rajasthan Act", the following has been laid down:

Sec. 4 (1A)

'To make such provisions as would enable affiliated Colleges and approved Institutions to undertake specialization of studies and to organise common laboratories, libraries, museums and other equipment for teaching, instruction, training and research'

(1B)

'To establish, maintain and manage Colleges, departments and institutes for research or specialized studies.'

(4A)

'To admit Colleges and institutions to the privileges of the University and to withdraw such privileges.'

(7)

'To inspect affiliated Colleges and approved institutions and to take measures to ensure that proper standards of teaching, instruction and training are maintained in them'.

The first teaching department in the university was established in the year 1949. Subsequently, more departments were established and from 1956 to 1965 was the phase of expansion of the university in terms of opening of new teaching departments. In the year 1962, the undergraduate teaching was also amalgamated with the University viz. the four Government Colleges at Jaipur were handed over to the University. Presently, there are 28 postgraduate teaching departments in the university. The University has eleven faculties. The number of colleges affiliated to the Rajasthan University is about 160.

In the process of expansion of the university teaching departments and constituent colleges, the care of affiliated colleges came to occupy less significant place. In terms of resource allocation, distribution of research grants, scholarships, financial assistance to attend seminars abroad and in India, it was felt that colleges are not being properly taken care of.

The 'Council' has to devise mechanism and procedures by which the standards of teaching and research are strengthened in the Colleges and through direct and quick channels of communication all relevant information is notified to the colleges.

To identify colleges which are located in backward areas and provide necessary institutionalized help to improve teaching and research standards through organization of vacation-schools, seminars, extension lectures etc. it would be possible to communicate latest trends in a discipline to the colleagues in colleges. It would be necessary to devise such institutionalized mechanisms by which the gap of standards between university and colleges is reduced to minimum and the University plays an effective academic role.

The following dimensions necessitate immediate attention of the Council:

- (1) It should be ensured that adequate physical facilities exist in the colleges. Each college

must have proper physical environment like buildings, play-grounds. Adequate facilities for students participation in games and extra-curricular activities should also exist.

- (2) **Library:** An adequate Library grant should be ensured. Necessary books both for the faculty and the students should be made available. On the basis of profile report of each College, gaps shall be identified and list of essential and reference books shall be prepared by sub-committees for each discipline so that core literature is made available. The ULP in each subject can be requested to send a quarterly bibliography to each College. The University Library should earmark certain books for lending these to the faculty teachers in the Colleges. Academic journals could be made available from identified regional centres which would provide documentary services to a cluster of Colleges.
- (3) **Laboratory:** The ULP in each subject may be requested to suggest modern laboratory programmes for teaching individual discipline. A model envisaging equipped laboratory for Science Subjects should be developed so that the colleges can adhere to minimum standard and uniformity. The 'Council' can play the role of a co-ordinating agency for the various ULP projects sanctioned to the University.
- (4) **Documentation Centres** should be established in different regions so that a group of colleges are able to obtain necessary Journals library and other facilities from a common pool.

Faculty improvement programme

The faculty in the Colleges is put to certain disadvantage as they are not exposed to latest literature in the discipline and have fewer opportunities for advancement of their knowledge. This can lead to routinization of teaching and mere parroting. It is therefore, necessary to ensure that adequate programmes for the improvement of faculty are chalked out:

- (a) Vacation-schools (Summer-Schools) should be organised by the university.
- (b) Symposia and Workshops.
- (c) Scheme of exchange of teachers ought to be made more effective so that teachers from the university can visit colleges for a longer duration. The Council could plan these visits and arrange effective participation of the experts in the subjects along with the Faculty in the Colleges.
- (d) Opportunities for informal meetings amongst College and university to discuss syllabus etc. should exist.

The Council should ensure speedy and effective pattern of information to the colleges regarding schemes of research grants, fellowships etc. for the teachers so that academic opportunities are properly

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Where project method scores

K. V. Natarajan*

Gandhiji advocated learning by doing. The project method of teaching is directly in line with Gandhiji's principle of learning and is a remarkable landmark in the methodology of education. This method originated from American philosophers belonging to the 'Pragmatic school of Philosophy', particularly Dr Dewey.

In the words of Ballard, "a project is a bit of real life that has been imparted into the school". Project which has pragmatism as its basis, is naturalistic, scientific and practical. The project method is an attempt to bring out what is in the child and to allow him to develop himself. It aims at using experience because it is the best master and one can never forget its lessons. It is not merely solving of a problem but is one that deals with the entire sequence of activities involved in a complete undertaking. Hence, it requires resetting of the whole curriculum and breaks all barriers of subject matter. When the activities of the project are made the sole means of education, they will cut across the time-table and class-room organisation which we are accustomed to.

The project method offers complete freedom to the pupil in respect of selection of problem to be solved and the means to be employed for solving it. It readily lends itself to group work. It provides an opportunity for the individuals to understand life by integrating facts and experiences. The materials used, design principles and fabrication processes employed are inter-related rather than independent. In the words of F. Theodore Struck, "the project method aims to bring unity out of what might otherwise be bewilderment!"

A good project will in general involve some elements of motor skills, reflective thinking, appreciation and difficult analysis. It should be of some value for the individual or the group that undertakes it. It must be one of application of knowledge from a good number of subjects.

The project must be timely in the sense that it should suit the age, vocational interests of the pupils and other seasonal factors. It should be neither too simple nor too long and difficult. It should be challenging and should call for reasonable amount of effort on the part of the students. The project must be viable. At the time of selection of a project, one should bear in mind its feasibility in the context of institute's milieu.

Right from the selection of the project to its completion teacher's guidance and prompting is very essential. The teacher must be a good prompter but his interference must be minimal. He must act as a

director and not as a dictator. He should observe the activities of the students keenly and see that they work in perfect co-operation. He should see that there are only workers and not shirkers.

Project method is not without limitations. In this method, much of learning takes place in a haphazard manner and there are certain organisational difficulties in the implementation of the same. But the merits of the method outnumber its defects. The students learn through solving of practical, live problems and this method lends itself very well to science and engineering works, handicraft, practical geography and other practical subjects. □

(Courtesy : The Hindu)

University Libraries in India

(continued from page 1237)

co-operation zone. Each library in the zone should take up the responsibility of providing a particular service, depending on its specialization, to all libraries in a zone e.g. one library may take up the job of providing translation from European languages, other from Indian languages, another of current awareness service in social sciences, next in humanities etc. Reprographic equipment may be installed in one library only.

This will marginally increase the financial requirements of the libraries. Authorities should be convinced to provide the same.

We resist the idea of forming apex and satellites. Resources are not to be put in a pool, but they must be used as a pool, to make this experiment a success.

- (a) The librarians of a group should meet regularly to review the work of their respective field of specialization and concentration.
- (b) The authorities should be made to provide facilities regarding communication, e.g.
 - (i) Telephone system available for library to library communication should be installed. It seems a costly affair but in the interest of the nation's longer perspective, it will prove cheaper.
 - (ii) Postal rates for inter-library service should be reduced.
 - (iii) A van to inter-change materials is required.
- (c) To make it a success the union catalogue of co-operating libraries is a must.

Conclusion

Our suggestions mainly aim at standardizing the staff provision, functional building, adequate funds and inter-Library Co-operation. We have not touched the aspect of technical services. It is because of the fact that it can be considered while framing standards for staff requirements, and at the time of providing the in-service training by the libraries.

We conclude by suggesting that a committee by Indian Library Association or by such other body be appointed to look into the matter in detail. □

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Need for re-assessment of Engineering Education

The high standards of living prevailing in many advanced nations are in no small measure due to the contributions of engineers. They have greatly helped in the creation of several viable systems of production, transportation, communication, housing and other socio-economic services. Betterment of the woefully inadequate living conditions in the developing countries has to be brought about. Here the role of engineers is indispensable. Roads have to be laid. Water and sewage systems have to be organised. Irrigation and drainage facilities are to be provided. Electricity has to be taken to rural areas. Technological changes have to be made. Above all, the quality of life of the people has to be improved. The engineer has a

their assignments with skill, but also help the country to make appropriate choices in matters of technological implications.

It may appear rather anomalous that our prestigious institutes of technology do not have departments of technology. They award bachelors and master degree in Technology after courses in Engineering. Is it that there is no difference between engineering and technology? Or is it an instance of conscious ambiguity? I feel that there is a distinction between them. Science, technology and engineering overlap each other and the borders between them are hazy. Yet, there is some distinction. The fact that the IITs were established as distinct from the large number of engineering colleges we already had and the

sation of knowledge is difficult to acquire and even more difficult is to impart knowledge. Professional training is more concerned with application of knowledge, technological courses have to be necessarily determined by the state of development of the nation, because their relevance to the needs of the nation is essential.

Engineering education has been passing through critical appraisal all over the world. It had a period of rapid growth till the mid-sixties to meet the needs of post war reconstruction and industrialisation. During the past decade, engineering enrolment has stabilised in many countries including India. Enrolment in USA has, even after two decades, not been able to reattain its 1945 level. Reorientation of engineering education has started in many countries including USA because of the realisation that conventional programmes do not answer the technological needs of the present and of the foreseeable future. If they do, it is only partial. Although this is equally, or even more true of India, we do not seem to have taken notice of it.

There is an increasing need for a cadre of interdisciplinary professionals who can recognise and tackle the problems of society in a creative way. The deliberations of the World Congress on Educating Engineers for World Development held in June 1975 favoured an interdisciplinary approach to engineering education, both in developed and developing countries, and a reorganisation of goals in engineering education to make "technologists" play a more important role than before in decision making.

We are a conservative lot. The developed countries, which served as our models are reorganising their engineering education to make it more relevant and effective to their changing situations. We have not even taken notice of these trends. There is now an increasing stress in these countries on experience (the word "experiential" is often used) and relevance to national needs in those countries. Reality is sought

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magnificent role to play in this great challenge of ambition to match action. We should respond to this challenge because it is at once socially preferable and personally rewarding.

There is an aspect however which has to be borne in mind. The handiwork of engineers is today posing great dangers to the health, happiness and even survival of mankind. Engineers, alongwith others, have unwittingly created problems involving environmental degradation, energy exhaustion, radio-active contamination, increased disaster probability, and the like. If these formidable problems are to be tackled efficiently and expeditiously the services of engineers are needed more than before. It is therefore exceedingly important that we have an adequate number of engineers who not only handle

fact that there is manifest emphasis on science in our IITs has a meaning. As a matter of fact some of the IITs appear to have been producing more Ph.Ds in science than in technology and engineering. If I remember right, Massachusetts Institute of Technology and California Institute of Technology were our model when the IITs were conceived. But could we say now that our IITs are close to MIT and Caltech as centres of innovations or of new technologies?

Ours is a society which has always attached the utmost value to pure knowledge. In teaching and research, we are inclined to regard pure knowledge and basic research as the first attainment, applied as second to it. Mathematical and theoretical preponderance in our engineering courses is not accidental. The art of utili-

to be introduced into engineering design courses by inviting industrial organisations to bring problems from their design offices to the attention of students. Also, students are made to visit people and places, where the problems are. They are placed in the clients' environment, external to the college. Syllabi are being drawn in consultation with industry.

Our syllabi have become overloaded in our anxiety to make them comprehensive. They represent almost every aspect in the related discipline. But we have no continuing system of review to shed the redundant. It is necessary to lighten the academic load on students to give them time for greater intellectual challenges and practical experience. We hardly have any scope for our talented students to work upon their creative ideas. Our excessive emphasis on book learning has been widely noticed. Have we not to lay as much emphasis on social and economical relevance of our teaching?

Our syllabi, students and faculty tend to remain unchanged by any interaction with Indian industry. We have our sights set on Western standards and the attraction of the West is felt all the way. Can we ensure relevance and appropriate returns for the country this way?

Our national stock of engineers increased from 60,000 graduates and 75,000 diploma holders in 1960 to well over two lakhs of graduate engineers and over three lakhs of diploma holders in 1975. This indicates a three fold growth. These are very large numbers of talented persons with valuable and expensive training. Our engineers have no doubt played a significant role in national development. However, to what extent have they, one may ask, interacted with our traditional resources, in terms of values added by modern technology?

We have the third largest number of scientific and technical personnel. Are we having appropriate impact on economy? Have we considered what employment potential can be developed through the activities of an engineer we train?

Our problems of development are deeply rooted in our soil. The development of sanitation and drinking water facilities is a crying necessity. Local resources have necessarily to be geared to the maximum possible extent in this national effort. We do not, however, seem to have public health engineering courses at the degree level in most of our engineering institutions. Problems of pollution and degradation of environment have become acute in many of our urban centres including Bombay. Yet, we do not have courses in environmental engineering.

India has a long coast-line which has to be defended. The off-shore resources, both biological and geological, extending upto 200 nautical miles to the sea have to be exploited. This area is nearly equal to the area of India. Yet we do not have naval, marine or ocean engineering courses even in our leading institutions located on the sea shore. Is it that these fields are not considered important enough in the national context? We do not seem to be seeing the obvious.

We have a number of regional engineering colleges in the country. Are they to be considered regional only because of their geographical position? To what extent do their courses have special relevance to the problems and programmes of the regions they are in? Is there no need for developing graduate courses to tackle the engineering problems of the rural areas?

I feel there is a need for a general course in engineering, a kind of engineering tripos, tailored to meet the needs of a developing country. This should enable the graduates to handle most of the operational, managerial and sales problems of engineering. At present a large number of our specialised graduate engineers devote most of their time to such activities. Many take Management degrees. A general engineering course with some acquaintanceship with Management Technique should be able to produce the type of people needed in large numbers in our country at present. They should be able to

acquit themselves better than bureaucrats or narrow specialists holding managerial positions. Subsequently they may specialise through experience, short term programmes, diploma courses, or postgraduate studies.

A large number of our engineering graduates go in for postgraduate degrees at present. At the IIT, Bombay, postgraduate students admitted last year constituted over 57 per cent of the total enrolment. It costs about Rs. 7,000 of public money per year to educate an undergraduate student at the IIT and much more on a postgraduate student. More than half the students at IIT, Bombay were admitted to courses taking two years or more of postgraduate work. Do we have our objectives clear regarding postgraduate education and research in engineering? There is no indication that large numbers of postgraduate engineers are in demand by the industry. It may be tragic to consider expensive postgraduate courses as possible palliatives for unemployment. There may be greater need for short term specialised academic courses, and longer practical programmes of which a substantial part is spent in set-ups in which engineers are actively associated with the type of problems they will be required to tackle in real situations. This is important to produce practical engineers.

What are we training our engineers for? Is it for working in the developed countries leading to what is termed brain drain? Is it for meeting the growing demand for technical personnel in the developing countries in the middle East and Africa? Or is it to tackle the developmental problems of India with the utmost expedition? With our abundant manpower resources and adequate facilities, it should be possible to meet all these needs. But the primary consideration I feel should be to meet national interests.

One of the important functions of engineers in developing countries is to take part in the choice of technology, especially when it comes to acquiring it from outside with all its associated impli-

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Punjabi Varsity organises Philosophical Congress

Shri Jaisukhlal Hathi, Governor of Punjab and Chancellor of the state universities in his inaugural address at the fifty third session of the Indian Philosophical Congress held in the Punjabi University campus called upon the assembled philosophers of the country to find a solution for the world which faced the danger of relapsing into meaningless and mutually destructive strife. He pointed out that several outstanding Indians had actively shared the social responsibilities and guided the society. The Indian philosophers were known the world over for their power of reasoning and analysis. The Governor hoped that members of the congress would keep up this tradition.

Smt. Mohinder Kaur in her presidential remarks said it was

Two hundred and fifty delegates, mostly from different universities of the country attended the Congress. One hundred fifty papers on different aspects of philosophy were presented during the four-day session of the congress.

Mysore to offer new courses

The Academic Council of Mysore University at its recent meeting approved the institution of two years Master's degree course in cooperation and food science. The examination to the course will be conducted partly by examination and partly by research. The Council agreed to the suggestion of reservation of three per cent seats for physically handicapped students in

scheme of teachers' fellowship programme to acquire research degree in any university was also approved at the meeting of the Council.

Madras Varsity proposes pre-degree teaching in Tamil

Professor G.R. Damodaran, Vice-Chancellor of Madras University said at the inaugural session of the seminar on medium of instruction held under the auspices of the University Teachers Association, that the university proposes to take steps to introduce teaching through Tamil medium in all the undergraduate courses by 1979-80. The change over has been recommended by the committee constituted by the syndicate for implementation of the programme of gradual transition from English to Tamil medium in the university. The Committee has further recommended that facilities for study of sociology and psychology at the postgraduate level were also to be provided and professional colleges might be asked to introduce Tamil medium as early as possible. Writing of research theses in science and humanities in Tamil ought to be encouraged. The students should be given option for writing examination in Tamil or English or even both.

The Vice-Chancellor felt that in the process of acquisition, application and dissemination of knowledge in the country where illiteracy and poverty were prevalent, regional language and mother tongue could only be considered suitable at all levels of education. Equal importance will also be given to the study of English as a language.

Dr. A. Krishnaswami, in his keynote address pointed out that English did not curtail the development of any regional language. He favoured freedom of choice in the matter of medium of instruction. Integration of terms in our languages was important. He suggested the opening of a linguistics centre where inter-diffusion of languages could take place.

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a matter of great concern that in a country like ours where all religions had advocated tolerance, this spirit was shrinking. She said the greater challenge to the wisdom of philosophers was to make the social conflicts creative and meaningful.

Dr. Amrik Singh, Vice-Chancellor of the university said in his welcome address that holding of the congress in the university gave an opportunity to the region to involve itself with the intellectual cross-currents of the country. He said the language problem faced by the country had to be resolved by academicians alone. He suggested that academicians should be proficient in more than one language. He referred to the rich heritage in philosophy and said there was no term which was not available in the ancient Sanskrit text of the country.

engineering and medical colleges. These students would also be exempted from the minimum requirements prescribed for admission to such courses. The council decided to continue the present arrangement of allowing the students who have passed BGL correspondence course to join (III) LL.B. in law colleges and award L.L.B. (academic) degree to successful candidates. The Bar Council of India however does not permit such candidates to practise as advocates.

The Academic Council approved the introduction of a course in English as a non-examination subject of study for foreign students not possessing sufficient knowledge of the language and seeking admission to the engineering degree course. The participation of teachers of undergraduate colleges in the UGC

Need for Science education for rural community

Professor V. Ramalingaswamy, President-elect of the Indian National Science Academy and Director of the All-India Institute of Medical Sciences while delivering the S. Bhagvantam's commemoration lecture in Hyderabad stressed the need for a community based self-care health movement for equitable distribution of modern medical facilities to all segments of society. He said such technology should be accessible, affordable and dependent on indigenous resources and local processing.

Earlier inaugurating the panel discussion on science and technology education for rural development organised by the Andhra Pradesh Akademi of Sciences, the State Secretary for Rural Development, Dr. C. Shravan Kumar made a plea for evolving simple and low-cost indigenous technology for the use of rural masses. He said rural development programmes will become meaningful when weaker sections of society were involved and provided with the infrastructure. The training imparted in most of the training centres which were located in the capital cities was not suitable to the requirements of the rural areas. He stressed the need for re-orientation of training programme which should aim at benefits of rural masses.

Dr. V.S. Rama Das, President of the Akademi in his address stressed the need to communicate scientific innovations in the field of agriculture, industries, water resources to the vast rural areas through mass media and adult education. Farmers in the coastal villages could be educated about the possible cultivation of useful crops and various systems of irrigation to optimise the use of available resources. He emphasised

the need for science education for rural community.

Dr. S. Balakrishna, Secretary of the Akademi said that panel discussion would evolve a suitable pattern and a methodology for integrated rural development.

Kamaraj Varsity organises seminar on NSS and Adult Education

Dr. V.C. Kulandaiswamy, Vice-Chancellor of Kamaraj Madurai University in his presidential address at the seminar on Adult Education and National Service Scheme stressed the need for radical change in the educational pattern. He said educationists should no longer be satisfied with the objective of expansion and quality improvement programmes. They should shoulder the responsibility of preparing the huge manpower, available in our country, for development activities of the nation. Social service has now become a part of the curriculum. This has created an awareness amongst students on the importance of village reconstruction. The benefits of advanced technology have not reached the rural areas in our country. The Vice-Chancellor urged that it was the duty of the NSS volunteers to fill this vacuum.

Dr. Kulandaiswamy said in a developing country like ours, education must be related to the national needs. There must be a correlation between the content of our teaching and research programmes and the developmental needs. The education centres should become active agents for promotion of social change. He said that education of the masses has become an imperative need and adult education an obvious means.

The participants of the seminar discussed in groups the various aspects of the national adult education programme and the National Service Scheme. The seminar was organised by the Department of Youth Welfare of the university for the benefit of principals of the affiliated colleges, NSS programme officers, Incharge of adult education centres of the colleges and student leaders.

New publications on adult education

About forty new publications have been brought out on the various areas of the adult education programme launched on October 2. Ground arrangements for implementation of the programme are being backed up by the primers, workbooks, and supplementary books in Hindi and regional languages. The promotional material present a significant feature of the programme. The material includes documentary films, colour slides and commentary, cartoon brochures and posters. Sixteen books, pamphlets and guidelines have also been published for the programme functionaries. The main feature of the recent publications is the visual presentation of their themes through illustrations. This has been attempted to make them interesting to learners, field functionaries as also to the general readers.

The state resource centres have also brought out teaching-learning material, audio-visual aids and other reference books. The directorate of adult education has listed all the material in one of their recent catalogues.

Importance of Adult Education

Professor Satish Chandra, Chairman of the University Grants Commission while participating in a panel discussion on adult education in New Delhi characterized the adult education programme launched on Gandhi Jayanti day as a national programme of vital importance aimed to transform the society as a

whole. He said the political parties were not expected to participate in the programme but they could extend their moral support to implement it. The voluntary agencies could be involved to make the programme a success. It has to be a programme of the masses. He felt that impact of the programme would be known when it was taken to villages. If the educated people belonging to the landless labour and members of the backward classes could be persuaded to accept the programme, it is likely to succeed.

Mr. Anil Bordia, Joint Secretary in the Union Education Ministry said that the programme aimed to impart formal education to adult population of one hundred million during the next five years. The Union Government had allocated rupees two hundred crores in the beginning. The Planning Commission had promised adequate funds for the programme. He said the programme was launched with three objectives in mind. These are: to impart literacy, numeracy, promote development of personality, and to bring about social awareness among the illiterate masses. The curricula of the adult education programme would include teaching of secularism, health and family planning, fundamental rights and some knowledge of the laws of the land which affect a common man.

Professor Jalaluddin, Director of the Adult Education Bureau described the programme as a communication programme to break the cultural barriers between the literate and the illiterates. The programme would give voice to the millions and has a potential of becoming an important instrument of social change.

Need for correspondence education stressed

Inaugurating the workshop on 'Distance Learning' at the Directorate of the Correspondence Courses of Panjab University, the State Governor and Chancellor of the university, Mr. Jaisukhlal Hathi said that correspondence

education in India has come to stay as a national necessity in response to the aspirations of those classes who were denied the facility of higher education in the past. There has been a fundamental change in the concept of education in the recent past. He said education was no longer considered a one-time affair but a life-long process. This was a sound idea even from the economic point of view.

Dr. R.C. Paul, Vice-Chancellor of the university in his welcome address observed that correspondence courses started by the various universities in the country have progressed well during the recent years. It has been estimated that over twenty per cent of the entire student enrolment in the higher education in 1985 would be through correspondence courses. There are as many as thirty universities in the country offering correspondence courses.

Major Jiwan Tewari, Director of the Correspondence Courses in the university said the principle of 'distance teaching' like the principle of teaching by other media was laid in the general laws of human learning. He stressed the need for promoting institutional evaluative research activities to shape this innovative system.

New pattern of education to be announced soon

Prime Minister Shri Morarji Desai, addressing the All-India Conference of Principals of Teachers Training Colleges at Gujarat Vidyapeeth said that Macaulay's pattern of education had kept the country under bondage for a long time. Education has to be given new content so that it could be socially useful and become the main instrument in making the country develop in consonance with the people's aspirations. The Prime Minister said that sole purpose of education could not be job-orientation but it should enable a man to discern right from wrong. We were caught up with the western ideas in the educational system and due to slavery of past years we had forgotten our

own rich cultural heritage. Education should make a person realise his own capacity and limitation and reach to a level of perfection in life. The present education did not provide ample opportunity to face the life.

The Prime Minister said that he had been contemplating changes in the educational pattern and had held talks with the vice-chancellors, University Grants Commission and educationists. He urged the educationists to come forward with their proposals for the betterment of society. The Prime Minister indicated that the new pattern of education would be announced within the next six months.

Call for simplification of Sanskrit education

Vice-President Shri B.D. Jatti inaugurated the national sanskrit education convention in Jaipur recently and urged the assembled scholars to suggest ways to simplify sanskrit education and mould it to our present requirements. Sanskrit had been powerful source of national integration and had occupied a special place for bringing about an emotional integration. It was the oldest language and occupied a very important place in the world. The Vice-President said the need for developing the literature and study of sanskrit was acknowledged by the government with the appointment of Sanskrit Commission twenty years ago. The Commission had recommended many plans for promotion of the language. There are now three thousand institutions apart from the universities offering opportunities for the study of the language.

The National Sanskrit Institute which was set up in 1977 has brought out many publications and worked for modernization of teaching of sanskrit. The Central Sanskrit Vidyapeeth is being developed as a research centre. The Vice-President said that government had taken various measures to revive and revitalise some well known sanskrit educational centres by providing sufficient financial aid.

Patna history department celebrates silver jubilee

Mr. S. Singh, former Vice-Chancellor of Ranchi University inaugurated recently the silver jubilee session of the Department of Ancient Indian History and Archaeology of Patna University. He said that in order to elevate the contemporary social and educational standards, it was necessary to impregnate them with the values of ancient Indian traditional heritage. He urged that working of the universities should be conducted in an atmosphere free from outside encroachment. He lauded the valuable work done by the department since its inception.

Dr. T.B. Mukherjee, Vice-Chancellor of the university in his presidential remarks highlighted the importance of cooperation of students and teachers in shaping the Indian culture which has a glorious heritage. He said building of a prosperous society depended on the development of education.

Dr. B.N. Puri, former professor of Lucknow University said that history played an exemplary role in building a nation. He pointed out that integration and disintegration had been the continuous process since sixth century till the contemporary times. He advocated for a better student-teacher relationship in order to bring peace in the campuses.

Dr. B.P. Sinha, head of the department of Ancient Indian History and Archaeology of the university urged in his address that ancient history and archaeology should be prescribed in the intermediate and B.A. courses of all universities.

Dr. Balbhadra Prasad, Dr. K.K. Dutta, former Vice-Chancellors of Patna University, Prof. G.R. Sharma of Allahabad University, Dr. Ram Sharan Sharma of Delhi University and Pt. Awadh Bihari Jha were some of

the special invitees who participated in the session.

Osmania to celebrate diamond jubilee in 1979

President, Shri N. Sanjiva Reddi will inaugurate the diamond jubilee celebrations of Osmania University during February 1979. The university proposes to launch several projects in the field of research and investigation, establish new schools in different scientific, technological, industrial, educational sociological areas and undertake study on problems of relevance to country in general and region in particular.

Dr. G. Ram Reddy, Vice-Chancellor of the university said in Hyderabad that a series of seminars and extension lectures covering a wide range of subjects relevant to the fast changing needs of the community would be organised during the diamond jubilee year. It was proposed to create new chairs in existing departments apart from adding studies in established departments of higher education to provide adequate incentives to teaching faculties. He said it was the objective of the university to branch off new areas of higher education by instituting courses in rural development, adult education to keep pace with the advancing trends of national development.

The Vice-Chancellor said that the university has an enrolment of forty-thousand students — ten thousand in the campus and constituent colleges and thirty thousand in the affiliated colleges.

It was proposed to involve the University of Hyderabad which was being housed in the 'Golden Threshold'—a house donated by Mrs Sarojini Naidu thereby celebrating simultaneously her birth centenary.

Need to link education with development

Dr. P. C. Chunder, Union Education Minister, in his inaugural address at the special session of the conference of Boards of Secondary Education held in New Delhi called for effective measures to end the growing alienation between education system and society. This could be brought about by linking education with social productive work. A sense of belonging to the country should also be inculcated among the students. He said the proposed changes in the system will make education comprehensive.

The Union Minister observed that there has been long discussion on the measures to improve education system and it was high time that some concrete action was taken.

Delivering the valedictory address, Shrimati Renuka Devi Barkataki, Union Minister of State for Education stressed the need to link education with development. She felt pattern of development of skill, calibre and competence depended on access as well as on content of education. The emphasis so far had been to enable the students to acquire a degree for employment. The phenomenon of educated unemployed had a direct testimony to the fault in the educational system which had not been recast to match the growing needs of the community. The Minister said the approach in the field of secondary education had to undergo a radical change.

Proposal to link courses with national development

The University Grants Commission in its recent circular to the universities has recommended that the courses at the first-degree level should be re-organised to make them more relevant to rural or urban requirements and to the development needs of the community. It has been suggested that the objective of re-structuring the curriculum at the first-degree level should be to ensure that the student is exposed to some application area and made conversant with the real life prob-

lems, in addition to acquiring the theoretical knowledge in the field. The gap between the world of work and the world of study should be bridged. Practical orientation to the post-school curriculum has been suggested in the circular. The first-degree course should be linked with practical work and field experience. This would imply participation of students in the various institutional activities with emphasis on rural re-orientation. The new curriculum will aim to provide a set of broad foundation courses in humanities, social sciences and the natural sciences. These courses together with applied studies and extension should occupy the student for twenty to twenty five percent of the time available for studies in the three-year courses. The remaining time should be devoted to the core programme within each faculty which would expose the student to several disciplines and give him an opportunity to study some chosen discipline in depth.

Jadavpur Varsity team climbs two himalayan peaks

Jadavpur University mountaineering-cum-scientific expedition led by Anup Banik Chowdhury scaled two peaks in Lahul Hinazaya of Himachal Pradesh within a span of three days. The team scaled the summit of 20,100 feet lion after plodding through-knee-deep snow and crossing a number of huge crevasses. Two of the members of the expedition, climbed an unnamed virgin peak of 19,750 feet in the same area three days earlier. All of them had a miraculous escape while descending after being caught in an avalanche.

Two of the scientific researchers of the team, Mr. Swapan Bose and Mr. Harendranath Bhattacharjee, have made interesting collection and findings on geology and glaciology of the area. They have found many new fossils and collected data which is likely to throw some light on the geology of the area.

The expedition left Calcutta in September and established its base camp at Bara Sigree glacier and

on the lion glacier before making the first bid for the summit.

Six scientists get Bhatnagar Award

The Council of Scientific and Industrial Research has chosen six scientists for award of Shanti Swarup Bhatnagar prize 1977. The scientists are: Dr. T.C. Anand, All India Institute of Medical Sciences (for biological sciences); Professor M.S. Raghunathan, Tata Institute of Fundamental Research (for mathematical sciences); Professor Mihir Chowdhury, Indian Association for the Cultivation of Science and Professor S. Ranganathan of Indian Institute of Technology, Kanpur (for chemical sciences); Dr. K. L. Kaila, National Geophysical Research Institute and Dr. Subir Kumar Ghosh of Jadavpur University (for earth sciences).

Colour TV lab at IIT

Mr. A.M.M. Arunachalam, Chairman of the Board of Governors of Indian Institute of Technology, Madras inaugurated recently the installation of a full-fledged colour television laboratory at the Institute's campus at Guindy. He characterised the new TV laboratory as a landmark of Indo-German collaboration.

Dr. R. G. Narayanamurthi, Director of the Institute expressed the hope that the Institute would be able to acquire a low-power colour TV transmitter under the next Indo-German agreement.

Professor M. K. Achuthan, Head of the Department of Electrical Engineering at the Institute said the laboratory is equipped for video tapework and would focus attention on digital TV techniques—like digital storage of video signals and on educational programmes.

British libraries to expand in India

British libraries in India are proposed to be expanded to answer the learning needs of growing society as part of the silver jubilee celebrations. Libraries are proposed to be set up in Ahmedabad and Hyderabad. The British

Council plans to use microprocessors for information retrieval to cope with the growing volume of information. The library proposes to use the computer for keeping records of issue and return of books. A telex system will be installed for providing information by a direct link with the other centres in India as well as in U.K.

National sports policy

The Union Ministry of Education is formulating a National Sports Policy which is expected to be placed before Parliament in its winter session. The matter was discussed by Members of Parliament recently in a session of the consultative committee meeting. The members highlighted the need to encourage sports in view of its utility in nation building and suggested a systematic development.

Dr. P.C. Chunder, Union Education Minister shared the members feeling that funds allocated for sports were inadequate. He said the government was preparing a national policy on sports in consultation with the All India Council of Sports. The emphasis among other things will be on building a broad sports-base and nursing the talent by teaching sports and physical education as a compulsory subject from first standard, as recommended by Ishwarbhai Patel Committee.

Book banks for medical and engineering students

The Union Ministry of Education has decided to establish book banks in each medical and engineering college in the country for provision of costly textbooks for both medical and engineering degree students holding scholarships and belonging to backward classes. The assistance for purchase of each set of textbooks for medical and engineering degree courses will be Rs 2,300 or the actual cost whichever is less. The assistance will include cost of steel almirah for storing books of a book bank. The scheme will be administered through the Principals of the colleges.

Plea for reorientation of NSS movement

Inaugurating the training course for the NSS Programme Officers of the Panjab, Himachal Pradesh and Punjabi Universities in University Campus, Patiala, Brigadier S.S. Chowdhary, Director of the Youth Services said that greater emphasis should be laid on projects for widening the awareness of villagers about various aspects of life through informal education. Manual labour and other earth work projects should not be the only programmes of the National Service Scheme.

Dr. Fauja Singh, Professor of History, Punjabi University, pleaded for emotional involvement of the programme officers in the movement to ensure concrete results.

Dr. I.M. Lal, coordinator of the training course said the aim of the course was to refresh the programme officers about the latest guidelines of the movement.

The course was sponsored by the Training and Orientation Centre of the Union Education Ministry located at the NSS department of the Punjabi University.

Scholarships for medical and engineering students raised

The Union Government has announced an increase in the rates of scholarships from this year for medical and engineering degree students belonging to backward classes. The revised rates of monthly maintenance allowance for students residing in hostels will now be Rs. 185 for boys and Rs. 195 for girls during the first year of medical and engineering degree courses and Rs 185 for boys and Rs 200 for girls in the second year and onwards. The scholarships for day scholars will be Rs 75 for boys and Rs 85 for girls in the first year and Rs 75 for boys and Rs 90 for girls in the second year.

Farm varsities to help rural housing programmes

The agricultural universities are providing their assistance to popularise improved designs in rural housing. As these univer-

sities play a pioneering role in the integrated development of rural area, it has been suggested that they put up demonstration of low cost rural houses in the campuses. The demonstrations are likely to attract large number of rural visitors, especially during kisan melas. The Gujarat Agricultural University has already set up a cluster of houses based on the designs evolved by Vallabh Vidyanagar wing of the National Building Organisation. It is expected that other agricultural universities will also assist in implementation of the programme.

New computer for IIT

The Indian Institute of Technology, Delhi will get a new ICL computer through British aid to meet its expanded requirements. The new computer will have a greater capacity than the last one which was procured by the Institute ten years ago. It will help the Institute to continue its important work of assisting the engineers and supplying up-to-date know-

how to Indian industry. The new computer is powerful enough to meet the Institute's needs over the next ten years.

Valmiki chair for Guru Nanak Dev University

The Punjab Chief Minister, Mr. Parkash Singh Badal, announced in Pathankot recently that Maharishi Valmiki chair will be set up at Guru Nanak Dev University to carry out research on the Maharishi. The Chief Minister said the Maharishi had shown the people the path to an ideal society.

Poona Varsity Radio Station

Poona University's independent radio station for education went on the air strictly experimentally on the campus on 9th October. The broadcasting station will monitor messages within a range of forty kilometre on the radio sets installed at several institutions which have been asked to send their observations to the station for study.

Re-assessment of Engineering Education

(continued from page 1242)

cations. The question that arises is whether to acquire a particular technology or not. And if acquired from outside, then how best to adapt it to local economic situation, social setting, available resources and skills. When we promoted teaching and research in science and engineering we seem to have taken it for granted that they would automatically lead to promotion of technological and economic development. This has unfortunately not happened. No wonder we have unemployment of engineers. Why do we then decry their attempt to find employment elsewhere and protest about "brain drain"? What else should we expect? Available knowledge has to be adequately geared to upgrade productive effort in the country. The training of engineers has thus to be related to the creation, adaptation, and transfer of technologies. Orientation, not blind copying, should be the guiding principle. The stages of setting up an undertaking, designing and developing

a new product, or launching and carrying out an important project should serve as a part of the educational framework. They are as relevant as any other part of the specialised disciplines.

We have to lay greater emphasis in our training on smaller manufacturing units. This would help in the dispersal of units, will promote greater utilisation of local resources, reduce transportation overheads, and enable more engineers to become entrepreneurs and provide large employment and better leadership. For this purpose, our engineering education has to devote full attention to our regional and local resources, and to the application of new technology to local environment and skills and enterprise.

I think the time has come for a thorough review of our engineering education and technical training programmes. □

[Excerpts from the convocation address delivered by Dr. Atma Ram, Chairman, NCST, at the IIT, Bombay.]

A list of Doctoral Theses Accepted by Indian Universities

SOCIAL SCIENCES

Anthropology

1. Bhaumik, Durdantachitta. Growth and development of the school children of Midnapore : A study among Brahman, Mahishya and Sadgope, castes. University of Calcutta.
2. Ghosh, Sumita. A study on the beggars of Kalighat, Calcutta. University of Calcutta.

Psychology

1. Menezes, Lillian. Interpersonal communication between parents and adolescents as related to adjustment in adolescents. M.S. University of Baroda.

Sociology

1. Bardoloi, Gopal. Population composition in Assam, 1901-61. Gauhati University.
2. Deb Roy, Hira Lal. A socio-religious study of the Jaintia Tribe : A study of their social philosophy. Gauhati University.

Political Science

1. Bhattacharjee, Kamana Krishna. Chief Commissioner-ship in Assam. Gauhati University.
2. Khan, Gulam Hassan. The freedom movement in Kashmir, 1931-40. University of Kashmir.
3. Shinde, Anandrao Baliram. Political consciousness among college students. Shivaji University.

Economics

1. Halan, Y.C. Development strategy for an economically depressed area : A study of the U.S. programme for appalachian development. Jawaharlal Nehru University.
2. Jani, V.K. Co-operative movement and economic development of Saurashtra with special reference to Rajkot District. Saurashtra University.

Law

1. Supakar, Shradhakar. The law of procedure in Ancient India. Sambalpur University.

Education

1. Dasgupta, Tapati. A critical study of the vocabulary in Bengali of the students of elementary grade (usually 7+ to 10+) reading in the Bengali medium schools in Greater Shillong. Gauhati University.
2. Mohd. Sharif. The educational thoughts of Tagore, Shri Aurobindo and Jawaharlal Nehru : A comparative study. University of Jammu.
3. Sudha, B.G. A study of few socio-psychological factors in relation to adolescent girls of the age group ten to sixteen. Bangalore University.

Commerce

1. Basu, Chittaranjan. Central banking in a planned economy : The Indian experiment. University of Calcutta.
2. Sahasrabudhe, Shriram Achutrao. A critical study of the problems of government accounting with special reference to India. Nagpur University.
3. Saikia, Gulab Chandra. A study of personnel management in large industrial undertakings in Assam with special reference to Assam Oil Company Limited, Digboi. Gauhati University.
4. Sengupta, Asit Kumar. Net transfer of resources on account of Central Government activity. University of Calcutta.

Home Science

1. Limaye, Kshama. Housing conditions in Nagpur City with reference to home management. Nagpur University.

HUMANITIES

Philosophy

1. Bagchi, Kalyankumar. The spiritual psychology of Professor Krishnachandra Bhattacharyya : A study of the subject as freedom. University of Calcutta.

2. Datta, Sujata. Nyaya theory of atomism : A critical and comparative study. Gurukula Kangri Vishwavidyalaya.

3. Dubay, Shaikumari. A linguistic study of Minyong dialect of NEFA. University of Calcutta.

4. Ghosh, Nripendra Bhushan. The moral philosophy of the Mahabharata : A critical study. Gurukula Kangri Vishwavidyalaya.

5. Rakshit, Syam Sundar. Some problems concerning knowledge and belief. University of Burdwan.

6. Sharma, Dev. Ramanuj darshan mein bhakti ka swarup. (Hindi), Gurukula Kangri Vishwavidyalaya.

7. Tyagi, Jeetendra. Yog aur jivan. (Hindi) Gurukula Kangri Vishwavidyalaya.

Language and Literature

English

1. Das Dhrubananda. English war poetry, 1914-54, Gauhati University.

2. Michael, Subhashini. The Tragic sense of Fitzgerald. Kanpur University.

Sanskrit

1. Bhattacharyya, Sunilkumar. Studies in the law of adultery as presented in the major Dharmasastra. University of Calcutta.

2. Jha, Bal Govind. Shiv drishtakhya granthasya Bhartivihari maten sahmikshatmak tulnatmakrchdhyayanam. Kameshwara Singh Darbhanga Sanskrit University.

3. Joshi, Bhagwati. Sanskrit ke aitihasik kavyakar Pandit Lakshmiapati aur unkee kritiyan ; Ek adhyayan. Kumaun University.

4. Meena Kumari. Kavya Prakashasya lok sahitya kimudhya : Vyakhyan samikshacha. Kameshwara Singh Darbhanga Sanskrit University.

5. Pathak, Jai Shankar. Ganit Jyotishastra mein agat paribhashit Shabdon ka ek adhyayan. Kameshwara Singh Darbhanga Sanskrit University.

6. Sharma, Shardanand. Vishishtavadweytaddweytavadyo : Vishist vishyayna samikshatmak tulnatmakchadhyayanam, Kameshwara Singh Darbhanga Sanskrit University.

7. Tandon, Kiran. Muni Shri Gyansagar ka vyaktity evam unke Sanskrit kavya granthon ka sahityik mulyankan. Kumaun University.

Hindi

1. Seetha Lakshmi, Kidambi. Age consciousness in Hindi, Telugu Ramanayas. Andhra University.

2. Sarma, Daya Nand. Historical background of medieval Hindi Krishna kavya. University of Jammu.

3. Sharma, Prince Mohan. Hindi tatha Dogri kahavton aur muhavarana ka tulnatmk adhyayan. University of Jammu.

Bengali

1. Basu, Alake. Bangla baishnab padevalir bhaktir sawarup. University of Calcutta.

2. Mukhopadhyay, Debi Prasanna. Prachin Bharat prakrita janasikshar upar dharmiya prabhav. Visva-Bharati.

3. Mukhopadhyay, Tapan Kumar. Adi Dharmamangal- kar Rupram Chakravartir Dharma Mangal Sampadana. Visva-Bharati.

4. Saha, Gaurchandra. Rabindra-Patraguchha : Tathya-panji. Visva-Bharati.

5. Sarkar, Keka. Sudhindranath Datta ; Jivan-o-sahitya. University of Burdwan.

Gujarati

1. Visani, D. N. Barmasi in Gujarati folk literature. Saurashtra University.

Marathi

1. Patil, Suman. Kanadi Marathichys Seemarehwanl Marathi Sahityicha abhyas. Shivaji University,

Telugu

1. Ananta Ram Sastry, N. A descriptive analysis of Srinadh's language. Nagarjuna University.

(continued on next page)

A list of select articles culled from Periodicals received in AIU Library during October, 1978

EDUCATIONAL PHILOSOPHY

Fores, Michael. "Obsession with separation that hides a regard for skill: The argument against the current view of the academy". *Times Higher Education Supplement* (357); 15 Sept 78: 10.

"LIBERALISE THE university". (Editorial) *Times Higher Education Supplement* (358); 22 Sept 78: 31.

Seshadri, C. "Case for philosophy of education". *Journal of Indian Education* 3(3); Sept 78: 7-14.

EDUCATIONAL SOCIOLOGY

"IN DEFENCE of Youth; Dr. Mulk Raj Anand in conversation with Kalpana Sharma". *Youth Times* 7 (13); 1-15 Oct 78: 8-9.

"O'Leary, John". "Legal status of student unions". *Times Higher Education Supplement* (360); 6 Oct 78; 8.

EDUCATIONAL PLANNING

Chunder, P.C. "Linking education with rural development". *EPA Bulletin* 1(2); July 78: 12-17.

Dudani, S.S. "Report of the working group on vocationalisation: A brief overview". *EPA Bulletin* 1(2); July 78: 32-7.

EDUCATIONAL ADMINISTRATION

Banerjee, Sumanta. "JNU and the political power game". *Economic Political Weekly* 13 (36); 9 Sept 78: 1542-4.

Braskamp, Larry A. Muffo, John A and Langston III, Ira W. "Determining salary equity: Policies, procedures and problems". *Journal of Higher Education* (Ohio). 49(3); May-June 78: 231-46.

"TIME TO question the power of professors". *Times Higher Education Supplement* (357); 15 Sept 78: 10.

CURRICULUM

Reagord, A. Simone. "State of the humanities". *Educational Record* 59 (2); Spring 78: 148-55.

TEACHING & TEACHERS' TRAINING

Mathur, V.S. "Educating the teacher". *University News* 16 (19); 1 Oct 78; 1188, 1196.

Shah, Champaklal Zaverchand. "Overview of the classroom: Concept, research and development". *University Journal* (South Gujarat University) 6: 77:48-55.

EDUCATIONAL RESEARCH

Passi, B.K. and Rama, T. "Appraisal of educational research in India". *Journal of Indian Education* 3(3); Sept 78: 35-43.

EVALUATION

Brooks, Sarah and Hartz, Mary A. "Predictive ability of a branching test". *Educational & Psychological Measurement* 38(2); Summer 78: 415-9.

Chitre, S.M. and Ramani, S. "Examination system: Can we salvage it?" *Science Today* 13(3); Sept 78: 12-18.

Ebel, Robert L. "Ineffectiveness of multiple true-false test items". *Educational & Psychological Measurement* 38(1); Spring 78: 37-44.

Jenkins, David. "Alternative educational evaluation and the open university". *Teaching at a Distance* (12); Summer 78: 43-56.

Kidwai, A.R. "Case for national merit examination". *University News* 16(19); 1 Oct 78: 1185-7.

Krus, David J. and Ney, Robert G. "Convergent and discriminant validity in item analysis". *Educational & Psychological Measurement* 38 (1); Spring 78: 135-7.

Parikh, B.A. "Development of a scale for the measurement of attitudes towards internal evaluation". *University Journal* (South Gujarat University) 6; 77: 19-28.

Prescott, Bill and Jarvis, Brinda "Continuous teaching and assessment: Two stage assignments in a full credit course". *Teaching at a Distance* (12); Summer 78: 10-25.

Serlin, Ronald C. "Method for increasing the reliability of a short multiple-choice test". *Educational & Psychological Measurement* 38(2); Summer 78: 337-40.

Srivastava, H.S. "Mechanics of grading in examinations". *Journal of Indian Education* 3(3); Sept 78: 15-21.

Werts, Charles, Linn, R.L. and Joreskog, K.G. "Reliability of college grades from longitudinal data". *Educational & Psychological Measurement* 38(1); Spring 78: 89-95.

Whitely, Susan E. and Doyle, Kenneth O. "Dimensions of effective teaching: Factors or artifacts". *Educational & Psychological Measurement* 38(1); Spring 78: 107-17.

ECONOMICS OF EDUCATION

Chawla, Prabhu. "Grey eminence". *India Today* 3(20) 16-31 Oct 78: 83.

Musgrave, Frank W. "Economics of education in Britain: An outsider's attempt at synthesis". *Journal of Human Resources* 13(1); Winter 78: 142-8.

Panchamukhi, P.R. "Employment and educational policy: The Indian experience". *Manpower Journal* 14(1); Apr-June 78: 31-56.

ADULT EDUCATION

Banerjee, Sushanta. "NAEP: A development perspective". *ASCI CENTRE for Educational Policy & Management Bulletin* 4(1); July 78: 44-7.

DeMott, Bengamin. "Thrills and shills of lifelong learning". *Change* 10 (4); Apr 78: 53-5.

Elliot, Stanley. "Tuition by post: An historical perspective". *Teaching at a Distance* (11); May 78: 12-16.

Gopal, A.K. "Making lifelong education a normal part of university life: A summary of report of committee of experts meeting". *EPA Bulletin* 1(2); July 78: 25-31.

Malhotra, Ashok. "Non-formal education in Tamil Nadu: A case study". *ASCI Centre for Educational Policy & Management Bulletin* 4(1); July 78: 14-26.

Malhotra, Ashok and Khan, Mir Zahiruddin Ali. "Review of adult education in India and future directions". *ASCI Centre for Educational Policy & Management Bulletin* 4(1); July 78: 1-13.

Ortan, Larry J. "Improving two way communications in correspondence teaching". *Teaching at a Distance* (11); May 78: 80-91.

Sinha, Dharni P. and Sharma, Ramesh Chandra. "Management of adult education system: A seminar report". *ASCI Centre for Educational Policy and Management Bulletin* 4(1); July 78; i-xxiv.

COMPARATIVE EDUCATION & COUNTRY STUDIES

Bhanot, S.N. "Educational change in India & China: A comparative study". *Journal of Indian Education* 3(3); Sept 78: 44-8.

"FOUR REFORMS to open up the universities. (Editorial)" *Times Higher Education Supplement* (359); 29 Sept 78: 31.

Sethi, Sunil. "IIAS: The joys of akademi". *India Today* 3(20); 16-31 Oct 8-13.

Theses of the Month

(Continued from previous page)

Fine Arts

1. Ranade, Vasant Y. Various phases of the stage music of Maharashtra. S.N.D.T. Women's University.

Geography

1. Biswas, Arabinda. Temporal and spatial variations of agriculture in the district of Birbhum in West Bengal. University of Burdwan.

History

1. Battacharjya, Umasaday. Development of local Government in Khasi Hills since 1900. Gauhati University.

2. Harshe, R.G. France and Ivory Coast: A study in continuing relations, 1956-66. Jawaharlal Nehru University.

3. Patodekar, Balbhim Marutirao. Impact of Buddhism outside India. Marathwada University.

4. Sen, Gour Pada. Some aspects of the economic life of the lower Ganges Valley from 1st century A.D. to 8th century A.D. University of Burdwan.

5. Sharma, Dewan Chand. Social and economic history of Kashmir, 1819-46. University of Jammu.

UNIVERSITY OF DELHI

Advt. No. Estab. IV/54/78

Dated 16th October, 1978

Applications on the prescribed form are invited for the following posts.

Department & Designation

Education : One Professor
Zoology : Three Readers (One for CAS)

Anthropology : Two Readers. One Lecturer (Temp. upto 16.7.1979)

Commerce: One Reader (International Finance & Liquidity): One Reader (For South Campus)

Modern Indian Languages: One Professor of Bengali: One Reader in Marathi

Mathematics: One Reader

Buddhist Studies: One Reader. & One Lecturer (Pali)

Modern European Languages: One Lecturer in German. Senior Technical Assistants (One each in German & French)

D.U. Library System: 7 Professional Assistants of which (3 reserved for S/C., 1 for S/T and 1 for X/S).

Computer Centre: One Senior Programmer. One Junior programmer

Botany: One Senior Technical Assistant (Technician).

Geography: One Junior Laboratory Assistant (Temp.)

Mathematical Statistics: One Laboratory Attendant

Scales of Pay

Professor: Rs. 1500-60-1800-100-2000-125/2-2500.

Reader Rs. 1200-50-1300-60-1900.

Senior Programmer: Rs. 1100-50-1600.

Junior Programmer: Rs. 700-40-900-EB-40-1100-50-1300.

Lecturer: Rs. 700-40-1100-50-1600.

Professional Assistant. Sr. Tech. Assistant. S.T.A. (Technician): Rs. 550-25-750-EB-30-900.

Junior Laboratory Assistant: Rs. 260-8-300-EB-8-340-EB-10-380-EB-10-480.

Laboratory Attendant: Rs. 210-4-250-EB-270.

All posts carry D.A., C.C.A. and H.R.A. as admissible under the rules in force in the University from time to time.

ESSENTIAL QUALIFICATIONS FOR Professorship

A Scholar of eminence. Independent published work of high standard and experience of teaching Post-graduate Classes and guiding research for a considerable period desirable.

Readerships

Good academic record with first or high second class Master's Degree in the subject concerned with a Doctor's Degree or equivalent published work.

Independent published work (in addition to the published work mentioned above) with atleast 5 years' teaching experience in Honours/Post-graduate classes essential.

Lectureships

Good academic record with a first or high second class Master's degree or an equivalent degree of a foreign University in the subject concerned.

(Note—Second class would mean atleast 50% marks in the subject or equivalent grade).

Desirable

(i) A Doctor's Degree or Evidence of Research work of equivalent standard in the subject concerned.

(ii) Teaching experience of Degree/Post-graduate classes.

Provided if a teacher is not Ph.D./M. Phil./M. Litt. at the time of his/her appointment and does not qualify himself/herself for award of Ph.D./M. Phil./M. Litt. degree from a recognised University in a subject which is being taught by him/her within a period of five years from the date of his/her appointment or does not give evidence of research work within that period in the subject concerned, he/she shall not be entitled to any future increments after the expiry of the said period of five years till such time he/she fulfils the above mentioned requirements.

Senior Programmer

(a) Atleast a second class (not less than 50% marks in the aggregate) Master's Degree in Mathematics, Statistics, Econometrics, Operational Research or Physics.

OR

Atleast a Second Class (not less than 50% marks in the aggregate) Bachelor's Degree in Engineering from a recognised institution; and

(b) (i) Atleast five years experience in Computer Programming at a recognised institution, and

(ii) Knowledge of atleast one of the high level languages like Fortran, Cobol, Algol, PL/1, and extensive experience of developing programmes for complex problems;

OR

A Ph.D. Degree from a recognised institution in Computer related disciplines like Systems Programming Numerical Analysis, Artificial Intelligence, Theory of Computability, and Theory of Formal Languages.

Junior Programmer

(a) Atleast a Second Class (not less than 50% marks in the aggregate) Master's Degree in Mathematics, Statistics, Econometrics, Operational Research, or Physics;

OR

Atleast a Second Class (not less than 50% marks in the aggregate) Bachelor's Degree in Engineering from a recognised institution; and

(b) (i) Atleast two years' experience in Computer Programming at a recognised institution;

(ii) Knowledge of one of the high level languages like Fortran, Cobol, Algol, PL/1.

Professional Assistant

(i) M.A./M.Sc./M.Com. and

(ii) B. Lib. Sc.

OR

(i) B.A./B.Sc./B.Com.

(ii) B.Lib.Sc. and

(iii) 4 years experience of working in a University/College Library.

Senior Technical Assistants (For M.E.L. Deptt.)

(1) Bachelor's Degree (2) Advance Diploma in language concerned with Distinction; (3) Well experience in handling Audio-Visual aids, knowledge of Script writing and have training in a recognised language laboratory; (4) Good knowledge of typing in the language concerned.

Senior Technical Assistant (Technician)

M.Sc. Physics with Electronics as a special paper or Bachelor's degree in Electronics or Diploma in Electronics with 5 years experience of handling of Electronics Laboratory Equipment.

Junior Laboratory Assistant

Should have passed Matric or equivalent Examination with Science subjects.

Laboratory Attendant

Matric or equivalent examination passed with Science subjects

SPECIAL/DESIRABLE QUALIFICATIONS

Readerships in Zoology

Specialization in Entomology/Endocrinology/Fish Biology/Cell Biology

Readership — Commerce (International Finance & Liquidity)

Selected candidate should also be able to teach Finance Courses at the Post-graduate and M.Phil. level.

Readership in Marathi

A Sound knowledge of the Theory and Practice of Comparative Literature.

Readership in Mathematics

Abstract Algebra.

Professional Assistants

Preference will be given to those having Master's Degree in Physics, Botany, Anthropology, Geology, Economics, Commerce, Sociology, Geography and degree in Education.

Senior Technical Assistants (For M.E.L. Deptt.)

(i) Some experience of handling books in Foreign languages or experience in documentation/publication work; (ii) Good knowledge of typing foreign languages other than that concerned; (iii) Candidates will have to appear in written test in the language concerned.

Senior Programmer

(a) Experience of participation in training programmes in Computer-related disciplines.

(b) Intensive experience in System Programming on a Third Generation Computer System.

Junior Programmer

(a) Experience of participation in training programmes in Computer-related disciplines, and

- (b) Knowledge of an assembly language.

Junior Laboratory Assistant

Should have knowledge of handling laboratory equipment and other stores.
Readership in Anthropology (For First Post)

- (a) Intensive field work experience in tribal/Peasant Societies.
(b) Specialization & teaching experience in one of the following branches: Kinship, Social Structure, Peasant Social System; Social Change in Tribal/Peasant Society, Political Anthropology.

Readership in Anthropology (For Second Post)

- (1) Specialization & teaching experience in one of the following branches:-
(a) Human Growth & Development (b) Dermatoglyphics (c) Physiological Anthropology (d) Human Cytogenetics (e) Bio-chemical & Serological Genetics (f) Human Population Genetics (g) Palaeo-anthropology.

- (2) Intensive field work experience.

Lectureship in Anthropology

- (1) Specialization in Social & Cultural Anthropology.

- (2) Field work experience.

Readership in Buddhist Studies

- (a) Ability to teach Buddhist literary & Philosophical texts in M.Phil Classes and guide research on the works of Buddhist Acharyas like Nagasena, Asvaghosa, Nagarjuna, Aryadeva, Dignaga, Asanga, Buddhaghosa, Dharmakirti and so on.

- (b) Ability to teach M.Phil. Classes and guide research in the field of Buddhist History, Archaeology, Epigraphy, Numismatics, etc.

- (c) Consistently good academic record in Pali & Sanskrit (language and literature) and/or History and Archaeology.

- (d) Knowledge of classical Chinese and/or Tibetan languages.

Lectureship in Pali

- (a) Ability to teach Pali through the medium of English and/or Hindi.

- (b) Consistently good academic record in Pali language and literature.

The prescribed application form can be had from the Information Office of the University either personally or by sending a self addressed envelope (size 5"×11") with postage stamps worth Rs. 2.80.

Selected candidates will have to produce the original documents relating to their age, qualifications, experience, etc. at the time of interview.

Applications (separate for each post) accompanied by attested copies of Degrees, other certificates, marksheets, published research articles, etc. should reach the undersigned not later than 20th November, 1978.

Note

1. It will be open to the university to consider the names of suitable candidates for teaching posts who may not have applied. Relaxation of any of the qualifications may be made in exceptional cases, in respect of all teaching posts on the recommendations of the Selection Committee.

2. Canvassing in any form by or on behalf of the candidates will disqualify.

3. Candidates from outside Delhi for teaching posts, only called for interview will be paid contribution towards travel expenses equivalent to 1½ single Second Class Rail Fare.

4. Those who have applied in response to the earlier advertisement for Lecturer in German and Sr. Tech. Assistants in the Deptt. of M.E.L. and Reader in Marathi in M.I.L. Deptt. need not apply again, but in case they have any additional information to supply, they may do so.

REGISTRAR

JAWAHARLAL NEHRU UNIVERSITY

Advt. No. ACA. III/11/78

Applications are invited for the following posts in the School of International Studies of the University:

CENTRE FOR STUDIES IN DIPLOMACY INTERNATIONAL LAW AND ECONOMICS

1. Professor/Senior Fellow in Diplomacy

Qualifications Essential

(i) Consistently good academic record with at least a high second class Master's Degree in any of the Social Sciences or an equivalent qualification from an Indian/Foreign University; (ii) A doctorate degree or published work of an equally high standard in the field of Diplomatic Studies; (iii) About ten years' experience of teaching and/or research in the field of Diplomatic Studies; and (iv) Considerable experience of guiding research in the field of Diplomatic Studies.

2. Professor/Senior Fellow in International Law

(i) Consistently good academic record with at least a high second class Master's Degree in any of the Social Sciences or an equivalent qualification from an Indian/Foreign University; (ii) A Doctor's Degree or published work of an equally high standard relating to International Law; and (iii) About ten years' teaching and/or research experience in International Law.

Desirable

Considerable experience of supervising research relating especially to Law, International Organization and Law of the sea.

CENTRE FOR WEST ASIAN AND AFRICAN STUDIES

3. Associate Professor/Fellow in Gulf Studies

Qualifications Essential

(i) Consistently good academic record with at least a high second class Master's Degree in Economics or an equivalent qualification from an Indian/Foreign University; (ii) A Doctor's degree or published work of an equally high standard relating to Gulf/West Asian Studies/International Trade Developing Economies; and (iii) About five

years' teaching and/or research experience.

Desirable

(i) Knowledge of Arabic or Persian language; and (ii) Experience of supervising research relating to Gulf/West Asian Studies/International Trade/Developing Economies.

4. Assistant Professor in Gulf Studies

Essential

(i) Consistently good academic record with at least a high second class Master's Degree in Political Science, History, Economics or Sociology or an equivalent qualification from an Indian/Foreign University; and (ii) A doctor's degree or published work of an equally high standard relating to Gulf/West Asian Studies.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (i) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a consistently good academic record (weightage being given to M.Phil or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Desirable

(i) Knowledge of Arabic or Persian Language; and (ii) Experience of Supervising research relating to Gulf/West Asian Studies.

5. Senior Research Fellowship in Gulf Studies

Essential

(i) A first or high second class Master's degree in one of the Social Sciences; (ii) A doctorate degree or equivalent published work in the field of Gulf Studies/West Asian Studies; and (iii) Research and/or teaching experience.

Note

Preference will be given to candidates below the age of 45 years. The value of the Fellowship is Rs. 600/- p.m. plus Rs. 2,000/- per annum for approved contingency expenditure. The salary of a deserving teacher-candidate selected for the award of the Fellowship may be protected upto Rs. 1100/ inclusive of the value of the Fellowship.

Scales of Pay

1. Professor/Senior Fellow:
Rs. 1500-60-1800-100-2000-125/2-2500.
2. Associate Professor/Fellow:
Rs. 1200-50-1300-60-1900.
3. Assistant Professor
Rs. 700-40-1100-50-1600.
Plus usual allowances admissible to

the members of the staff in the Central Universities.

Relaxation in any of the qualifications may be made (a) in favour of persons of eminence or of high academic/professional distinction, and (b) in exceptional cases where adequately qualified persons are not available but are otherwise found suitable for the respective positions. It will also be open to the University to consider the names of suitable candidates who may not have applied.

The selected candidates for faculty positions will be expected to participate in the teaching and research programmes in the concerned discipline in other Schools of the University as well as in the programmes offered in their own Centres of Studies.

Normally appointment of Senior Fellows/Fellows is made on contract basis for a period ranging from one to three years.

Benefits of C.P. Fund-cum-Gratuity/G.P. Fund-cum-Pension-cum-Gratuity are available as per University rules.

Persons already in employment should route their applications through proper channel.

Due consideration will be given to candidates belonging to SC/ST at the level of Assistant Professor.

Second class (mail) rail fare (both ways) will be paid to candidates invited to appear for interview from outstation by the shortest route subject to the production of rail receipt.

Applications, separate for each post, on the prescribed form, obtainable free of cost from the University by sending a self-addressed and stamped envelope of 23cm x 10cm size to the Deputy Registrar (Academic) Jawaharlal Nehru University, New Mehrauli Road, New Delhi-110067, should reach him latest by 8th November, 1978.

Candidates from abroad, applying for faculty position, may apply on plain paper, (but their applications should reach the University by the last date) furnishing all the relevant information such as their names; date and place of birth; marital status; nationality; state of domicile; postal and permanent addresses; father's name and address; academic and professional attainments; full details of (a) publications, and (b) research projects undertaken; language(s) known; details of visits to foreign countries; and the names and addresses of at least two persons well acquainted with the candidates professional work who should also be requested by the candidate to forward to the Deputy Registrar (Academic) confidential report concerning the candidate.

SOUTH GUJARAT UNIVERSITY

“University Campus, Udhana-Magdalla Road, Post Box No. 49, Surat-395007

Applications are invited in the prescribed form (in eight copies) for the following posts in the Post-Graduate Departments of the University.

Name of the Department and the Number of Posts.

1. Business & Industrial Management

One Placement Officer

Candidates must hold an M.B.A. or equivalent qualification with some experience of placement work in business and industry. Those with knowledge or qualifications in the area of Personnel Management and/or Measurement and Selection Techniques will be preferred.

2. Sociology

One Reader

A person qualified in Social Anthropology/Tribal Sociology will be preferred.

Pay Scales are as under:

1. Placement Officer: Rs. 1100-50-1300-60-1600

2. Reader : Rs. 1200-50-1300-60-1600 Assessment 60-1900.

In addition to pay, dearness allowance, House Rent Allowance and other benefits like contributory provident fund and gratuity as may be decided from time to time by the University are admissible.

Information about the qualifications prescribed for the above posts and the prescribed application forms can be had on payment of Rs. 7/- in cash or by postal order in favour of the Registrar, South Gujarat University, Surat with self addressed envelope of 23 cm x 13cm. size duly stamped with Rs. 0-50 ps. The last date for receipt of application is 30-11-1978.

G.A. Desai
REGISTRAR

ALIGARH MUSLIM UNIVERSITY

Advertisement No. 22/78-79

Applications, on the prescribed form, are invited for the following posts:

1. Professor of Psychology, Scale Rs. 1500-60-1800-100-2000-125/2-2500 plus allowances.

Qualifications ordinarily required

(a) A first or a high second class Master's Degree in Psychology of an Indian University or equivalent foreign qualification; (b) Research degree of a Doctorate standard or published work of a high standard; and (c) Atleast ten years experience of teaching postgraduate classes and guiding research.

2. Professor of Law (Temporary), Scale Rs. 1500-60-1800-100-2000-125/2-2500 plus allowances:

Qualification ordinarily required

(a) A first or a high second class Master's Degree in Law of an Indian University or equivalent foreign qualification; (b) Research degree of a Doctorate standard or published work of a high standard; and (c) Atleast ten years experience of teaching postgraduate classes and guiding research.

3. Lecturer in Radio Engg. in Electronics Engg. Section (Temporary) Women's Polytechnic, scale Rs. 700-40 1100-50-1600 plus allowances.

Qualifications

Ordinarily atleast a Second Class Bachelor's Degree in Electronics Engg. or its equivalent.

Desirable

Preference will be given to the Women candidates.

Prescribed application forms and instructions may be had from the Deputy Registrar (Executive) either personally or by sending a self addressed envelope of 23 x 10 cm. Last date for receipt of applications is 21st November 1978. Incomplete applications and those received late may not be considered.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T.A. equal to one single Second Class Railway fare only.

Jamalur Rahman
REGISTRAR

Concept of College Development Council

(continued from page 1239)

publicized and availed of by the colleagues in the colleges.

The Council should thus continuously assess the needs of each college, plan for rational allocation of resources, identify colleges in the backward regions and make special efforts for their improvement. It should plan programmes for the improvement of teaching in the colleges and help in organizing academic activities for the improvement of the faculty.

The Council should ensure that conditions of affiliation are fulfilled by colleges; new colleges are started by the Government after due consultation with the Council. Any structural changes envisaged in the format of college in relationship to university through notification, legal enactments should also be done after consultation with the Council. The Council should be coordinating link between college and university, college and U.G.C., Education Department and U.G.C., Education Department and University. This will help in evolving right norm and effective procedures for coordinating activities of all the institutions involved in the teaching in Colleges viz. U.G.C., University, Education Department of the State and the Colleges.

INDIAN INSTITUTE OF TECHNOLOGY KANPUR-208016

Advertisement No. 26/78

Applications are invited for 15 posts of Research Engineers in Advanced Centre for Electronic Systems of the Electrical Engineering Department. The selected candidates will be working on sponsored research and development projects, assigned to them from time to time. Presently, the Centre is engaged in projects in the areas of digital communication over fading dispersive channels e.g. tropo, fibre optics, radar clutter, ELF communication, high precision instrumentation for signal averaging in and microprocessor based signal processing, special semi-conductor device development and computer aided design. These projects are currently sponsored by Ministry of Defence, DST and Electronics Commission.

QUALIFICATIONS

(a) Essential

The applicants must have First Class Bachelor's degree in Electrical Engineering with good academic record and specialization in any of the following areas of Electronics and Communication:

- (i) Design of digital subsystems and interface to computers; Micro-processor and related software.
- (ii) Electronic circuit design—digital, linear and RF.
- (iii) Radar signal processing.

(b) Desirable

A Master's degree in Electrical Engineering with specialization in Electronics and Communication shall be preferred.

The requirement of First Class in Bachelor's degree may be relaxed for candidates possessing exceptionally good experience in the areas of specialisation.

Depending on their qualifications and experience, the selected candidates may be offered any of the following positions:

Research Engineer 'B'

Rs. 1100-50-1600

Research Engineer 'A'

Rs. 700-40-900-EB-40-1100-50-1300

The posts are contractual for an initial period of four years which may further be extended by another two years. Research Engineers after satisfactory completion of six years of continuous contractual service become eligible for consideration for permanent positions of research engineers in the Institute.

Preference will be given to Scheduled Caste/Schedule Tribe candidates, if found suitable.

Residential housing, when available, is provided on the Campus. The Campus facilities include primary and higher secondary schools, a health centre and a shopping centre.

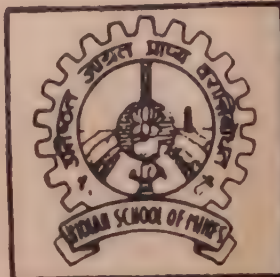
All the appointments will be on contract. Besides pay, posts carry allowances according to institute rules, which at present correspond to those admissible to Central Government employees stationed at Kanpur. Higher initial pay is admissible to specially qualified and deserving candidates. Candidates called for interview will be paid second class railway fare for travel inside India from the place of duty to Kanpur and back by the shortest route.

Applications from persons in India should be made on the prescribed forms obtainable free of charge from the Registrar of the Institute by sending a self-addressed unstamped envelope of 25×10 cm size. Applications should be accompanied by a postal order for Rs. 7.50 (Rs. 1.87 for SC/ST candidates).

Persons abroad may apply on plain paper (three copies) including an ac-

count of their academic and professional records and reprints of publications, fields of specialisation etc. They should also give names of atleast three persons who are intimately acquainted with their academic activities.

All applications should reach the Registrar, Indian Institute of Technology, IIT Post Office, Kanpur-208016 U.P. latest by November 25, 1978.



Indian school of Mines

Advt. No. 420013/78

DHANBAD

Dated 6.10.1978

I. Indian School of Mines a 'deemed University' under the UGC Act, 1956. invites applications for the following faculty positions:

1. **One Visiting Professor** (for a term of six months extendable by a second term) for the Deptt of Min Engineering.
2. **One Visiting Asstt. Professor** (in Rock Mechanics/Mine Systems Design/Mine Development & Construction) for the Deptt of Min Engg (for a term of one year, extendable by a second term)
3. **Six Lecturers** (a) One in Fuel Engg (lien vacancy) but likely to continue; (b) One in Mineral Engg-both for the Deptt of Chemistry Fuel & Metallurgy; (c) Two in Mechanical Engg for the Deptt. of Engg & Mining Machinery; (d) One in Min Engg. for the Deptt. of Min Engg; (e) One for the Deptt of Industrial Engg and Management.

The visiting assignments would suit persons employed in industry or research, etc, who are desirous of academic interaction and exposure.

PAY SCALE AND UPPER AGE LIMIT

Visiting Professor	Rs. 1500-2500 (50 years)
Visiting Asstt. Prof.	Rs. 1200-1900 (40 years)
Lecturers	Rs. 700-1600 (35 years)

Allowances admissible as per Govt of India rules sanctioned from time to time. Total emoluments currently amount to Rs. 994 at the Rs. 700 stage; Rs. 1563 at the Rs. 1200 stage; Rs. 1863 at the Rs. 1500 stage and 2263 at the Rs. 1900 stage. Upper age limit relaxable in respect of certain specified categories of persons and for candidates otherwise considered specially suitable.

II. Specialising in the field of earth science and technology, Indian School of Mines conducts three B Tech programmes (in Min. Engg, Min Machinery and Pet Engg), two M Sc programmes (in App Geology and App Geophysics), ten industry-oriented post-graduate programmes in Mining Geophysics/Mineral Exploration/Engg Geology/Min and Mine Planning/Opencast Mining/Min Machinery/Drilling Engg/Mineral Engg/Fuel Engg/Industrial Engg & Management. Two additional M. Tech programmes (in Pet. Engg and Pet Production) are expected to be started next year. MPhil programmes in App Geology and App Geophysics are also run. The School also has an ambitious Continuing Education/Executive Development Programme (covering about 30 courses per year), a strong R & D activity and an approved scheme of institutional consultancy.

III. Detailed information-for-candidates and prescribed application form are obtainable from the Registrar, Indian School of Mines, Dhanbad-826004, on sending a self addressed envelope of the size 30 cm×12 cm affixed with postal stamps of the value of Rs. 3.25 paise. Applications in the prescribed application form, complete in all respects should reach the undersigned on or before 13th November, 1978. Those in service are advised to apply through their employer (s).

S.P. VARMA
REGISTRAR

A.I.U. PUBLICATIONS

	(Rs.)
1. Universities Handbook—1977	140.00
2. Handbook of Medical Education—1978	10.00
3. Association of Indian Universities—History	50.00
4. Higher Education and Development	30.00
5. University Finance—A Statistical Profile	50.00
6. Enrolment in Higher Education—A trend analysis	20.00
7. Handbook of Rules & Regulations for Inter-University Tournaments	7.50

Bibliography of Doctoral Dissertations (1857-1970)

8. Social Sciences	50.00
9. Humanities	100.00
10. Physical Sciences	125.00
11. Biological Sciences	100.00
<i>Note : Also available in paperbacks in individual discipline</i>	
12. Social Sciences & Humanities—1975-76	50.00
13. Natural & Applied Sciences—1975-76	90.00

Research in Progress

14. Social Sciences	32.00
15. Humanities	50.00
16. Physical Sciences	40.00
17. Biological Sciences	35.00

On Examinations

18. Towards Better Questions	5.00
19. Monograph on Grading	5.00
20. Monograph on Question Banking	5.00
21. Monograph on Internal Assessment	6.00
22. Monograph on Test & Item Analysis	10.00
23. Monograph on Question Banking in English Language & Literature	6.00
24. Management of Examinations	35.00
25. Research Abstracts—Part I, II & III	each 6.00
26. Monograph on Practical Examinations	In Press

Question Bank Book Series

27. Mathematics	35.00
28. Physics	20.00
29. Chemistry	30.00
30. Zoology	25.00
31. Botany	20.00
32. History	15.00
33. Geography	15.00
34. Psychology	25.00
35. Economics	25.00
36. Commerce	25.00
37. Political Science	22.00
38. Foods & Nutrition	25.00

Address enquiries to:

Association of Indian Universities
Rouse Avenue, New Delhi 110002

JAWAHARLAL NEHRU UNIVERSITY

NEW DELHI-110067

Advt. No. Aca. III/9/78

Applications are invited for the following posts:

School of Social Sciences
Centre of Social Medicine and
Community Health.

1. Associate Professor/Fellow in Community Health

- A consistently good academic record in MBBS or an equivalent qualification from an Indian or foreign university.
- A post graduate degree in any aspect of community health.
- A doctoral degree in any aspect of community health or published work of an equally high standard.
- About five years of teaching experience or experience in developing inter-disciplinary approach to the education and training, research and consultation in the field of community health.

2. Assistant Professors in Community Health

- A consistently good academic record in MBBS or an equivalent qualification from an Indian or foreign university.
- A post-graduate degree in any aspect of community health.
- A doctoral degree in any aspect of community health or published work of an equally high standard.
- Teaching or research experience in the field of community health.

3. Assistant Professor in Social Anthropology

- Consistently good academic record with atleast high second class Master's degree in Social Anthropology, or its equivalent qualification from an Indian/foreign university and
- A doctor's degree or published work of an equally high standard.

Desirable

Some teaching or research experience.
Note : For post 2 and 3 : If the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of qualification prescribed in (a) above.

Further if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a consistently good academic record (weightage being given to M. Phil. or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn

future increments until he fulfils these requirements.

4. Documentation Officers Essential Qualifications

- First or high second class M. Lib. Science.
- Three years experience in Library and/or Documentation work.

Desirable: Experience in documentation work in social medicine and community health.

Scales of Pay

- Associate Professor / Foilow : Rs. 1200-50-1300-60-1900.
- Assistant Professor : Rs. 700-40-1100-50-1600.
- Documentation Officer: Rs. 700-40-1100-50-1300.

Plus usual allowances as admissible to the members of the staff in the Central Universities.

Relaxation in any of the qualifications may be made (a) in favour of persons of eminence or of high academic/professional distinction, and (b) in exceptional cases where adequately qualified persons are not available but are otherwise found suitable for the respective positions. It will also be open to the University to consider the names of suitable candidates who may not have applied.

The selected candidates for faculty positions will be expected to participate in the teaching and research programmes in the concerned discipline in other schools of the University as well as in the programmes offered in their own Centres of Studies.

Normally appointment of Fellows is made on contract basis for a period ranging from one to three years.

Benefits of C.P. Fund-cum-Gratuity/G.P. Fund-cum-Pension-cum-Gratuity are available as per University rules.

Persons already in employment should route their applications through proper channel.

Due consideration will be given to candidates belonging to SC/ST at the level of Assistant Professor/Documentation Officer.

Second class (mail) rail fare (both ways) will be paid to candidates invited to appear for interview from outstation by the shortest route subject to the production of rail receipt.

Applications, separate for each post, on the prescribed form, obtainable free of cost from the University by sending a self-addressed and stamped envelope of 23cmx10cm size to the DEPUTY REGISTRAR (ACADEMIC), Jawaharlal Nehru University, New Mehrauli Road, New Delhi-110067. should reach him latest by 8-11-1978.

Candidates from abroad, applying for faculty positions, may apply on plain paper, (but their applications should reach the University by the last date) furnishing all the relevant information such as their names; date and place of birth; marital status; nationality; state of domicile; postal and permanent addresses; father's name and address;

academic and professional attainments; full details of (a) publications, and (b) research projects undertaken; language (s) known; details of visits to foreign countries; and the names and addresses of at least two persons well acquainted with the candidates professional work who should also be requested by the candidate to forward to the DEPUTY REGISTRAR (ACADEMIC) confidential report concerning the candidate.

UNIVERSITY OF JABALPUR Jabalpur

Advertisement No. DSW/78/4508

Dated 17 Oct., '78

Applications are invited for the award of the following scholarships. The application forms and other particulars can be had from the office of the undersigned on any working day.

- U.G.C. Research Fellowships in Science & Humanities including Social Sciences—For 4 years. Rs. 400/- p.m.+Rs. 1500/- Contingency Grant per annum.
- University Fellowships—For 2 years. Rs. 300/- p.m. without contingency.

Qualifications

- Candidate must possess the Post Graduate Degree in FIRST CLASS OR with a minimum of 55% Marks OR B+ in Grading System.
- For University Fellowships the candidate must hold the Master Degree from University of Jabalpur.
- The Candidate must be below the age of 30 years.
- The Candidate should be registered for Ph. D. Degree in this University or should have applied for the same.

The last date for the submission of the application form is 15th November, 1978.

(Ajay Chauhan)
DEAN OF STUDENTS
WELFARE

UNIVERSITY OF KERALA

No. Ad.AI(1)120/78

Notification

Applications are invited from qualified candidates for appointment as Reader in Library and Information Science in the University Department of Library and Information Science, Trivandrum.

Scale of Pay Rs. 850-1450.

Details regarding qualifications, age etc. and the prescribed application forms can be had from the Deputy Registrar (Admn.) University of Kerala, Trivandrum-1 on payment of Rs. 2/- by challan to "K.U.F." account or Crossed Postal Order drawn in favour of the "Finance Officer, University of Kerala, Trivandrum".

The last date for receipt of application is 15-11-78.

C.K. Devassy
REGISTRAR

University lews

A CHRONICLE OF HIGHER EDUCATION & RESEARCH NOVEMBER 15, 1978 80 PAISE

International Council of Correspondence Education Meets in New Delhi



Vice-President, Shri B.D. Jatti, inaugurated the annual meeting of the International Council of Correspondence Education in New Delhi. Dr. David M. Young and Dr. B. Holmberg, President and past-President of the Council are also seen in the picture.

CLASSIFIED ADVERTISEMENTS

INDIAN INSTITUTE OF TECHNOLOGY, KANPUR

Kanpur-208016

Advertisement No. 28 78

Applications are invited for the following posts in the Computer Centre of the Institute.

Associate Programmer : (2 Posts)

Pay Scale: Rs. 650-30-740-35-880-EB-40-960.

Essential Qualifications and Experience

- (i) M.Sc. in Mathematics, Statistics or Bachelor's Degree in Engineering.
- (ii) Two years experience in programming in a high level language (preferably FORTRAN) and as assembly/low-level language.

Responsibilities

Systems software maintenance and improvement.

The Indian Institute of Technology Kanpur has well equipped laboratories and Central Facilities. The Institute has a large Computer Centre with IBM 7044, IBM 1401, IBM 1800, PDP-1 systems with interactive graphic terminals and TDC-316 and a group of experienced programmers. IBM 7044/1401 will be replaced by DEC 1090 shortly. The Institute has a well stacked library with more than 150,000 volumes and 1,300 periodicals.

Posts are permanent and carry retirement benefits in the shape of CPF Scheme or CPF-Cum-Gratuity Scheme or GPF-cum-Gratuity Scheme as may be opted according to rules. The age of retirement is 60 years. During the first year, the appointment will be on probation.

Besides pay, posts carry allowances according to the Institute rules, which at present correspond to those admissible to the Central Government employees stationed at Kanpur. Higher initial pay is admissible to exceptionally qualified and deserving candidates. Candidates called for interview will be paid second class railway fare from the place of duty to Kanpur and back by the shortest route.

Application must be made on prescribed form obtainable free of charge from the Registrar of the Institute by sending a self addressed unstamped envelope of 25 cm. x 10 cm. size. Application should be accompanied by a postal order for Rs. 7.50 (1.87 for SC/ST candidates).

Applications should reach the Registrar, Indian Institute of Technology Kanpur, IIT Post Office, Kanpur-208016 U.P. (India) on or before 30th November, 1978.

GURU NANAK DEV UNIVERSITY, AMRITSAR

Advertisement No. 22/78

Applications are invited for the following posts on prescribed form obtainable (free of cost) from office of the Registrar, Guru Nanak Dev University, Amritsar by making written request accompanied by self-addressed stamped envelope of 23 x 10 cm. so as to reach this office by 24.11.1978 alongwith crossed postal order(s) for Rs. 7.50 for post at Sr. No. 1 and Rs. 5/- for posts at Sr. No. 2 & 3 drawn in favour of Registrar, Guru Nanak Dev University, Amritsar. Application free is not refundable.

Note: Persons already in employment must send their applications through their employers.

Grade: (plus allowances as admissible under University rules).

1. Reader in Guru Nanak Studies Department (Rs. 1200-50-1300-60-1900).
2. Junior Research Fellow (U.G.C.) in Sociology (Rs. 400/- p.m. fixed).
3. Junior Research Fellow (U.G.C.) in Law (Rs. 400/- p.m. fixed).

QUALIFICATIONS

For post at Sr. No. 1

Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

About five years' experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position. This condition may be relaxed in the case of candidates with outstanding research work.

Other essential and desirable qualifications

(i) M.A. in History; (ii) Publications in English and/or Punjabi/Hindi/Urdu.

Desirable

Knowledge of Persian/Urdu and Hindi.

Note Higher start may be given to a deserving candidate.

For posts at Sr. No. 2 & 3

(i) First or High Second Class Master's degree in the subject concerned; (ii) Aptitude for research.

Mohinder Singh Randhawa
REGISTRAR

ALL INDIA INSTITUTE OF MEDICAL SCIENCES

Ansari Nagar, New Delhi

Advertisement No. 2/78 ESTT.

Applications will be received by the Director, All India Institute of Medical Sciences, Ansari Nagar, New Delhi from the Indian citizens upto the 15th December, 1978 on the prescribed forms available on request for the following temporary posts:

1. Professor

One each for (i) Medicine (ii) Surgery (iii) Neuro-Surgery for Neuro Sciences Centre and (iv) Ophthalmology for Dr. Rajendra Prasad Centre for Ophthalmic Sciences.

Pay: Rs. 2400-100-2500-125/2-3000 inclusive of N.P.A.

2. Associate Professor

One each for (i) Paediatrics and (ii) Neuro-Radiology for Neuro-Sciences Centre.

Pay : Rs. 2000-75-2525 inclusive of N.P.A.

3. Assistant Professor

One each for (i) Haematology (ii) Neuro-psychiatry for Neuro-Sciences Centre (iii) Nuclear Medicine and (iv) Ocular Microbiology for Dr. Rajendra Prasad Centre for Ophthalmic Sciences.

Pay : (i) Rs. 1700-60-2060 inclusive of N.P.A. for Medical Officers, (ii) Rs. 1200-50-1300-60-1900 for non-medical Officers.

NOTE

- (i) For the post of Assistant Professor of Nuclear Medicine and Ocular Microbiology both Medical and Non-Medical Candidates will be considered.
- (ii) For the post of Assistant Professor of Haematology the Post-graduate qualifications should either be in Medicine or Pathology.

4. Lecturer

One each for (i) Medicine (ii) Orthopaedics and (iii) Pharmacology.

Pay: (i) Rs. 1400-60-1760 inclusive of N.P.A. for Medical Officers, (ii) Rs. 700-40-1100-50-1600 for Non-Medical Officers.

NOTE For the post of Lecturer in Pharmacology both Medical and Non-Medical candidates will be considered.

5. Physicist

One post (for Neuro-Sciences Centre)

Pay : Rs. 650-30-740-35-810-EB-35-880-40-1000-EB-40-1200.

6. Nursing Superintendent

One post (for Dr. Rajendra Prasad Centre for Ophthalmic Sciences.)

Pay : Rs. 700-40-900-EB-40-1100-50-1300.

Upper Age Limit

50 years for teaching posts and 30 years for Non-teaching posts relaxable for Government servants, scheduled castes and Scheduled Tribes candidates or otherwise exceptionally qualified candidates.

NOTE: The essential qualifications are relaxable at the discretion of the Selecting Authority.

Application forms and detailed information sheets can be obtained either personally or on written requests accompanied by a self addressed stamped (0.55 paise) envelope (23 cm x 8 cm).

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*Opinions expressed in the articles
and reviews are individual and do
not necessarily reflect the policies
of the Association*

Hony. Editor : ANJNI KUMAR

Good Teachers

R. K. Singh*

The Times of India carries an editorial under the above caption in its issue of September 17, which however naively argued, is bound to find acceptance in a large section of the teaching profession and educational administrators on government pay rolls. For this reason, and additionally because of the respectability of the Paper, a serious notice has to be taken of the proposition set forth by it.

The editorial has raised an issue decades after it was settled with almost a unanimous voice in more advanced countries of the West. Referring to a directive of the U.G.C. it says that "they plainly fail to recognise however, that teaching and doing research are two quite distinct occupations, calling for different temperaments and capabilities." With equal naivety it brings the Delhi and J. N. Universities in the witness box as much in proof of the above stated proposition as to commend the action of the University of Delhi in lowering the basic qualifications for recruitment of teachers in that University. The editorial says; "It is for this reason that Delhi University no longer insists that its Lecturers should obtain an M. Phil. in five years, while J. N. University has dispensed with the stipulation regarding research altogether and decided that teaching experience alone will suffice. Indeed, Delhi University has gone one step further and lowered the qualifying examination marks for a Lecturer from 55 to 50, which is just 2 p.c. above the 3rd division line. If the statement is correct, one cannot help guessing for a non-academic cause for the decision. The purpose of this paper therefore is to examine the validity of the main proposition. The corollaries and consequential action will stand or fall by it.

Much in the same manner Cardinal Newman had emphasised 126 years earlier in the year 1852 this supposed dichotomy in his treatise, Idea of a University, which started a serious controversy on the issue in the West. Said he, "To discover and to teach are two different functions; they are also distinct gifts, and are not commonly found united in the same person. The Times editorial makes the same assertion. Both appear to be based on casual observation. When Newman made the assertion, research as a function of a University was in infancy. His casualness can be understood but not of the writer of the Times editorial. If he had looked around he would have found that there are innumerable instances of co-existence of both the capabilities in the same persons. There are universities which rarely recruit a non-Ph.D for a teaching position. In the Agricultural Universities continuing research along with teaching is a must. The work schedule of the faculty is based on this principle. It is true however that there are a few good teachers without research qualifications as there are some good researchers who cannot become good teachers either because of some serious speech or other handicaps or because of a false notion that teaching is an inferior function; but so far as capabilities are concerned deep intellectual qualities thirst for knowledge, sustained effort etc., they must be common to both. The only other difference is that the classroom teacher can last with a little less of all these three, even with parrot like repetitions (equally boring to both the teacher and the taught) since his activities are confined to the four walls of a classroom. The researcher on the other hand has an international or at least a national exposure and is easily exposed if his researches fall below an accepted standard. Many of the teachers perhaps most of them who are not engaged in research cease to grow within a few years of their professional life and become routiners. It was to this class of teachers to whom A. J. Scott of Owens College, Manchester

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*Former Vice-Chancellor, Meerut & H.P. Universities.

Teacher Training Programmes in Physical Education

S. Srivatsan*

Physical Education is as old as mankind. In the recent day set up Physical Education is an accepted discipline in the field of education. To designate Physical Education as a field of scientific effort will not be exaggerating its concept, since it is a field of performing art in which scientific principles are applied liberally. That is why Physical Education is both a "science and an art." The true meaning of Physical Education is understood clearly when it is seen "that education of the individual taking place through the medium of Physical Activities". Hence it is not merely "the education of the physical". In developed countries Physical Education is termed as "movement education", "sports education", "human engineering", "body mechanics" etc. Whatever may be the latest trends in U.S.A., U.S.S.R. and other nations, the age old concept and importance of Physical Education as an integral part of total education cannot be under estimated.

Of late in every discipline of human activity there is emphasis on scientific approach in the preparation of professional personnel for the onerous responsibilities to be discharged. Physical Education profession is no exception to this. Ever since the dawn of independence there has been the need to have teacher training institutions in Physical Education established on a sound foundation, so that the edifice of the profession of physical education could stand firmly as well as fittingly. The important role that qualified Physical Education teachers have to play today have acquired considerable significance since Physical Education is considered to be strong foundation on which the future of Indian sports achievements in the national and international arena are to be fostered. If education is considered as the sine qua non for economic development in India then Physical Education is certainly the basis for spotting talents and nurturing them in the field of sports and games. The common adage is that "teachers in any discipline are made and not born" — Are our Physical Education personnel prepared adequately for this noble task? The responsibility of preparing teachers to become efficient teachers and effective Physical Education workers is with the institutions of physical education and University departments of Physical Education, which of late, have come to play an important role in the Indian set up. The very essence of any physical education teacher training programme emphasises on quality and excellence. But strangely enough, the criticism levelled against colleges of physical education and other agencies involved in the professional preparation of physical education workers is that such institutions are not subscribing to Accreditation and Certification requirements. It is

therefore deemed that professional preparation of physical education personnel is in a melting pot as far as India is concerned.

We have in our country, thanks to the constitutional implications—education being a state subject—as many kinds of institutions and agencies preparing teachers in physical education as there are states and universities. This results in utter chaos and sub-standard professional preparation in physical education, as compared to other disciplines such as Medicine, Engineering, Agriculture, Journalism, Fine Arts etc. Colleges of Physical Education and university departments of Physical Education impart instruction in teaching methods in physical education along with other subjects like philosophical, sociological and psychological aspects of Physical Education, problems in Physical Education and sports, school and college administration for Physical Education, sports coaching etc. Several methods of teaching and coaching in sports and games are taught to the prospective teachers. But unfortunately when these 'student teachers' become fullfledged teachers on employment, they realise that these methods are not workable or the senior Physical Education teachers already working have some aversion to such of these approaches. Why is it so?

It is quite surprising that experiments worth the name have neither been conducted to assess the worth of these techniques nor the results of these studies have been made known to the physical education teachers. To a prospective teacher the method happens to be just serving the purposes of the examination. It is high time that institutions and departments of Physical Education shouldered the onerous task of orienting Physical Education workers to some of these modern techniques. Unfortunately and surprisingly enough the colleges of Physical Education have remained in complete isolation from schools and colleges where their trainees ultimately go to do the spade work.

Physical Education teachers in schools, colleges and universities are expected to discharge a variety of responsibilities other than looking after the organisation and administration of Physical Education programmes. To cite a few, these personnel have to assist in co-curricular activities, (students club, publications, tours and excursions etc.), as well as in the general institutional tasks. Physical Education workers are to be adequately trained for this. But sadly enough it is not the case as it prevails now. These activities must become an integral part of teacher training programme in Physical Education. This is feasible to some extent during the 'student teaching periods' when student trainees are expected to become a part of the very institutional set up

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*Senior Faculty Member, LNCPE, Gwalior.

Rural and Development Broadcasting

H. R. Arakeri*

The countries in the developing parts of the world will continue primarily to be countries of villages with vast majority of population living in rural areas. It has been realised since long that these countries cannot prosper unless development takes place in economic as well as other spheres in rural areas.

Much has been said and written about rural development and its problems. Social reformers in these countries have tried to impress on the concerned about the need for increased attention to the problems of rural development. Swami Vivekananda once said, "No amount of politics would be of any avail until the masses in India are once more well educated, well fed and well cared for". Gandhiji, however, imparted a sense of urgency to rural development programmes. On numerous occasions, he tried to invite the attention of the planners, public men and even common men to this problem. Number of attempts have been made in different countries of this region in various ways to solve this riddle. Somehow, the problem has proved to be elusive. There is renewed interest all over the world on rural development. Serious attempts are being made to understand and come in grips with the problem. Number of new ventures have been launched in different countries like Sri Lanka, Philippines, Nepal etc. In India, massive programme has been launched. It is hoped that the results of these attempts in different countries will be satisfying.

It is being increasingly realised that the problem of rural development is the problem of developing and utilising the human resources. Human resources comprises persons who could be put to productive work. It is just not the number of persons that matters but their knowledge, skill, aptitude and physical ability to work which are more important. The development and utilisation of the human resources implies ensuring all the people with right kind of nutritious food, appropriate health services and facilities for acquiring needed knowledge and skills. Every individual in the country will have to be provided with adequate opportunity to the fullest extent possible by acquiring appropriate knowledge, skill and aptitude to enable him or her to lead a healthy and purposeful life and also to contribute to the social and economic development of the country. The human resource of our country is vast numerically. This resource is to be developed qualitatively and utilised. Development, therefore, has to concern with the development of whole-person and all-persons. It has to embrace considerations of equity and justice too. Human resource development is therefore considered the key to rural development.

The tasks connected with human resources development are gigantic. Efforts will have to be geared

to develop appropriate education and training system which will enable every individual to gain right knowledge and skill and put it to effective use. The entire system will have to be development oriented. The system includes generation of appropriate knowledge by carrying out needed research and transferring the same to the users spread out all over the country. Development takes place to the extent the knowledge is put to use in an appropriate manner. It is not just generation of knowledge but the extent to which it is to use is important. The efficiency with which the information is conveyed therefore becomes very crucial in any development programme.

Radio is one of the means that can be used to reach larger number of persons with a message, information and even knowledge. It cuts across the barriers of literacy, electricity and physical terrain. The revolution in the transistor receiver technology has made the radio an attractive medium of mass communication in the developing countries. Although AIR has been conscious since its inception on the role radio can play in informing and educating the rural masses about the new ideas, practices and technology, the establishment of farm and home units in the year 1966 marked the advent of a new era. The Farm and Home units were set up to provide information and education support to the rural development programmes initiated by Central and State Governments. Achievements of the first 10 years, encouraged the Government of India to enlarge the scope of the farm broadcast in the country, and at present 49 out of 86 AIR stations have set up farm and home units although the rural programmes are broadcast from all the AIR stations. On an average, most of the stations broadcast an hour's programme daily. The broadcast covers a wide variety of subjects. The programmes also include folk music which provide entertainment to the rural listeners. Farm and Home units have introduced a number of innovations in farm broadcasting during the last twenty years. The recent innovation is starting farm school on the air. This programme is now being broadcast from 20 AIR stations. Very large number of farmers have been enrolling for the various farm schools. AIR, Bangalore Farm School on paddy cultivation was a great success. Similarly, the programme on jowar cultivation relayed from Dharwar in this State also proved to be a great success. Recently, the programme on dairy farming has been started and it is understood that thousands of farmers have enrolled for the same. This shows that the farm school programme is becoming quite popular.

New information is generated through research. This information has to reach the users. Several kinds of organisations have been set up in different countries for conveying information generated as a result of research. To be effective, development information will have to be site and season specific. Messages will have to be clear, credible and comprehensive. It is only then that the users will have faith in such messages and will be eager to understand the contents and use the same for their benefit. To ensure that it is so, the information and message have to originate from the information generating centres as

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many developed countries are equipped with information disseminating facilities. In India and in many other countries, broadcasting facilities are not available with information generating centres. But such available facilities in these countries are very easily accessible for use by such centres. It is therefore very necessary that there is close coordination, collaboration and cooperation between the information generating agencies, agencies responsible for transfer of such information to users and broadcasting agencies. Such effective mechanism has been established in this State and participants will have a chance to observe the same.

The broadcasting agencies will have to stimulate the information generating and transferring agencies to make use of their media. The agency itself will have to collect appropriate material, process it and prepare the same for broadcasting in an effective manner. Such functions can be carried out efficiently only when the persons engaged in performing these tasks are well trained. These persons will have to have basic subject-matter knowledge and also possess the skills required for processing the material for broadcasting, keeping in view the listeners' requirements. It is possible to build such capabilities in these persons only through proper training. At present, such training facilities do not appear to be sufficient in many developing countries. It would be worthwhile if the group would spend some time in deliberating on this question and come out with appropriate recommendations. Holding of this workshop itself is no doubt one of the appropriate steps to build the capabilities of the persons engaged in broadcasting. Much more than that is needed in this behalf.

It is not fully realised that listening and understanding the messages conveyed through air is itself an art. It is not sufficient if listeners listen and understand but they will have to put the information gathered to use. The listener will have to explore all possibilities of using it for his benefit. He will have to be sure that it is applicable to the situation in which he is working. To enable listeners to be better adopters they will have to be provided with opportunities to interact with the listeners and other knowledgeable persons. Appropriate mechanism for such interaction will have to be developed and used. It is said that information is not knowledge and knowledge not wisdom or skill. Radio will be able to convey information and to some extent knowledge. Steps will have to be taken to ensure that listeners will be able to process the information and knowledge conveyed and convert the same to usable forms. This is where considerable thinking is required.

Lastly, it is necessary to see that continuous evaluation will have to be arranged for. It is only through knowing what is happening in the field that it would be possible to make necessary changes in the programmes to meet the needs of the listeners. It is therefore very necessary to develop appropriate mechanism for a continuous evaluation of the programmes in order to understand the effectiveness of the broadcasts and also the requirements of the listeners.

The Government of India appointed a committee

to make suggestions for the improvement of the working of the All India Radio as well as Television system in the country. The committee after a thorough deliberation has made very useful suggestions.

[Excerpts from the address delivered by Dr. H.R. Arakeri at the Regional Workshop on Rural and Development Broadcasting.]

Teacher Training Programmes in Physical Education

(Continued from page 1260)

where they are assigned for 'practice teaching' work. Even though this principle is accepted, it is yet to be implemented properly.

Colleges of Physical Education and University Departments of Physical Education have become agencies for producing teachers and not centres for training quality personnel. Concentration in these centres is heavily on examinations and the main aim is to get good results in the examinations. Therefore the primary emphasis is on class room lectures, and dictation of notes which are the two most adversely criticised methods of teaching. Theory and principles of several progressive methods of teaching are lectured to 'student teacher', but these methods are seldom put into practice in the educational institutions. Such important concepts as individualised instructions, diagnosis and remedial teaching are **only on paper**—never practised. It is often heard that students who cannot get admission elsewhere, get easily admitted to Physical Education training institutions. If we are to prepare quality teacher, those with attitude for physical education must be admitted. Admissions now a days are done on several other considerations save merit and aptitude. As long as this is not done, there will be only mediocre, and frustrated students entering colleges of Physical Education and hence the quality is bound to suffer. It is in this direction that state and central governments have to play a positive role by clearly defining accreditation and certification standards. If the Government can evolve a policy of giving scholarships and other benefits, it is bound to attract students with aptitude and merit, which are essential ingredients of quality professional preparation.

In view of the different kinds of professional preparation in Physical Education presently in vogue in our country, it would not be out of place to suggest here to have a '**Nationally formed accrediting agency**' to coordinate and control Physical Education teacher training programmes for different levels of education. A beginning has to be made for 'selective admission' in these institutions with majority of prospective student teachers drawn from areas with science as background subject. In addition to job-oriented training it must be borne in mind that a physical education teacher is a '**general practitioner**' and hence he must know '**Something of everything**'. As he moves up in the ladder, experience will instil in him the spirit of knowing '**everything of something**'—which in the modern sense will mean '**extreme specialisation**'. □

Farm Varsities VCs Meet

Shri B. Sivaraman, Planning Commission Member while opening the two day conference of Vice-Chancellors of agricultural universities in New Delhi said that every worker in the field of education, research or extension must be a multidisciplinary man and should have the understanding of the interplay of these systems. He felt these systems of importance in agricultural universities appeared to be working without an interplay. He called for a better link between the University and the extension wings and underlined the importance of animal husbandry in agricultural education which has immense potential for providing employment. He urged the universities to regard horticulture as an important part of agriculture. Horticulture has an important place in Himachal Pradesh and the hill areas of Uttar Pradesh.

Institute of Historical Studies held at Dibrugarh University suggested to the scholars to undertake research on themes relating to economic history of India so that the role of economic motivation in national policies, international behaviour might be adjudged in proper perspective. He said the British scholars had overlooked the economic aspects of British domination over India. Dadabhai Naoroji was the first Indian nationalist who brought to notice the vast economic drain of Indian wealth. Dr. Gupta said that this phase of Indian history needed further research as Naoroji had no access to records and his study was based on known facts only. Two other important aspects relating to the decline of traditional industries and indigenous economic institutions in various regions also need re-appraisal.

Dr. Ganda Singh, former Pro-

data required to assess the progress of the plan schemes. The seminar emphasised that the country should not depend on imported computer programme as our needs were different and new programmes should be devised for our own needs. The focus was on the specific role of computers as data processing and storage devices in streamlining and improving the statistical system keeping in view the objectives of development envisaged in the plans.

Dr. Raj Krishna, Member of the Planning Commission, said greater computerisation would not lead to unemployment but will help create more jobs. The existing personnel could be trained in computer processing which would ensure their continued employment.

The seminar was organised by the Indian Statistical Institute in collaboration with the Planning Commission and Central Statistical Organisation.

Plan for Farm Varsity in J & K

The Indian Council of Agricultural Research has prepared an elaborate plan to meet the training and educational needs of the farming community of the hill area to enable them to make the best use of rich plant, animal, soil and water resources of the himalayn region. The programme includes the suggestion for establishment of an agricultural university in Jammu & Kashmir. The agricultural university at Palampur and the agricultural college at Nagaland have recently been established under the scheme approved by the Council. The Council proposes that the university in Jammu & Kashmir should deal with the problems in horticulture, animal husbandry, soil and water conservation, pasture and range management, post harvest technology including marketing and agro-forestry. The scope for establishing horticulture garden colonies in the various campuses is being examined by the Council.

The programme is the result of detailed review of the agricultural research, training and educational needs by the governing body of the Council.

CAMPUS NEWS

The country possessed immense resources in land, water and employment could be pushed up by refining the technology and taking it to the farmer.

Dr. M. S. Swaminathan, Director-General of the Indian Council of Agricultural Research, in his welcome address emphasized that the main thrust of their discussions should be in evolving the best return from the investment in agricultural universities.

The conference discussed the report of the review committee, steps for strengthening of research capabilities of agricultural universities, collaboration with international organisations, career prospects projects and plans for improving the economic well-being of farm families.

Plea for research on economic history of India

Dr. H. L. Gupta, Professor of History at the Saugar University in his presidential address at the annual conference of Indian

fessor of History at Aligarh University, in his inaugural address called upon the research scholars to conduct study of inter-state relationship with a view to strengthening the bond among people living in different states of the country. He said that such a study was not only interesting but immensely useful.

Earlier Dr. S. Gogoi, Vice-Chancellor of the host university said in his welcome address that the whole panorama of the region's history was yet to come to light. He hoped that the conference will help unlocking the doors of mystery and laying the correct method of interpreting the facts.

Seminar on role of computers

The two-day seminar organised in New Delhi on the impact of computers on the statistical system in India has recommended the increased computerisation to speed up the flow of statistics and ensuring a quick feedback of

New guidelines for post-graduate admissions

The University Grants Commission has recommended that admissions to postgraduate courses should be allowed to candidates who have completed three-year degree course. It will be obligatory for a student to do a year's bridge course for postgraduate education in case he has passed the two years degree course.

The Commission has favoured a three-year course for the first degree which will be preferably known as honours course. It has been recommended that twenty to twenty five percent of the time should be devoted to foundation courses in humanities, social sciences and sciences along with projects and extension work. The remaining time should be given to the core programme which may be a study of one or two disciplines in depth or a broad exposure to several disciplines. The need for updating the courses has also been emphasised. Students may be allowed to break away from the traditional combinations and courses may be broken into smaller units keeping in view the local demands.

Several measures have been suggested to secure the advantage of the new pattern of education. These include introduction of new methods of teaching, examination reform and giving autonomous status to colleges. Indian authors may be encouraged to produce books in regional languages to ensure utilisation of indigenous data and research findings. The substitution of classroom lectures by tutorials, seminar discussions, guiding and self-study sessions have been recommended. The concept of sessional evaluation, grading, semester system and question banks should be incorporated in the courses. The new procedure is expected to bring about a proper integration of teaching, learning and evaluation.

National policy on medical education

The draft on the national policy to make medical education serve as an instrument of social

justice was considered at a recent meeting of the Central Council of Health held in New Delhi. The policy seeks to change the emphasis in the system of medical education from disease-oriented and hospital based teaching programmes to preventive, curative and rehabilitative aspects in a phased manner. The re-orientation is considered necessary in the context of present efforts to provide need-based health care for the masses. On the basis of in-depth study, changes in the structure and content of medical education have also been suggested. It is proposed that medical colleges located in major cities could also use an urban slum for imparting community orientation instead of the primary health centres attached to the college. It is felt that representation in medical colleges to candidates from rural and semi-urban areas is not adequate. This has resulted in unfair dispersal of medical manpower between rural and urban sectors. The scope for attempting innovative measures to provide facilities to students from the poorer and under-privileged section of the rural population has also been felt. The Health Ministry has therefore justified its decision to lower the percentage of marks prescribed for admission to medical courses in favour of backward class candidates. State governments will be approached to conduct coaching classes to enable such candidates to get admission in medical colleges. The Medical Council of India feels that although it would be advantageous to adopt regional languages in medical colleges it may not be appropriate to introduce them at present stage due to non-availability of textbooks and other material.

Teachers urged to provide educational & social leadership

Dr. P.C. Chunder, Union Education Minister, in his recent convocation address at the Madras University called upon the teaching community to lend its support in reorganising the present educational system and building

a new social order. He said teachers at all levels, particularly at the university level, had to provide social and educational leadership. Their moral authority and commitment to ideals made them natural leaders in the field. The Education Minister suggested that teachers should have an in-depth study of the community problems and assist in formulating a new approach in teaching. If teachers could assume the role of a community adviser and influence the functioning of the community organisations, fair solutions could be found to many of the social and national problems. A strong constructive movement of teachers' organisations was necessary for meeting this task. The Minister said that India's record of achievement in the field of education was impressive. He said that we have established a well organised system of education and some of our institutions of higher learning could be compared favourably with the best in the developed world. The scientific and technological manpower in size and in quality could also be compared favourably with those of the developed countries.

Dr. Chunder referred to the educational policy adopted a decade ago and said that the regional languages were most suited for learning. The real objective of education was to develop human faculties and the role the language played was that of a vehicle of communion.

Vocationalisation of courses

Dr. P. C. Chunder, Union Education Minister, while inaugurating a seminar on vocationalisation at plus two stage in Madras said the potentiality of the new scheme of education in India had been recognised at the World Bank level. The World Bank had observed after a survey that India's future development lay in new plans of education, particularly adult education. The Minister said the traditional pattern of education had lost its relevance. Education had to be purposeful and this perspective was needed in every branch of education. Adult education did

not mean adult literacy but improvement of skill in the field of work relating to agriculture health or sanitation. The alienation of our educated youth from society could be removed if the mental make up of children could be changed in favour of working with own hands. The Union Minister said cultural and physical education should be considered compulsory subject so that a comprehensive base could be created.

Shri C. Aranganayagam, the State Education Minister said the appointment of part-time Instructors for different vocations was a major step taken in Tamil Nadu for vocationalisation of education. The appointment of the best student as a vocational monitor with payment of rupees twenty per month was also being welcomed as an incentive to students. He said the success of vocational education would depend on the smooth transition of students from plus two stage to professional course in the universities.

Professor G. R. Damodaran, Vice-Chancellor of Madras University in his keynote address assured the cooperation of the university to make the programme of vocationalisation a success.

PAU organises training course for priests

The Department of Extension Education of the Punjab Agricultural University organised recently a training course in scientific agriculture for the religious heads. Dr. Amrik Singh Cheema, Vice-Chancellor of the university said that the time had come when the priests engaged in meditation and spiritual preaching should act as extension agent and carry out the programme of advanced farm technology. It is estimated that Punjab has fifty thousand to one lac acres of agricultural land attached to the different religious institutions. The cultivation of this land is done with conventional methods. The Vice-Chancellor hoped that on account of their influence on their farmer-devotees, these priests would be able to bring about an agricultural revolution. If the agricultural land

attached to these institutions is cultivated on modern lines, it would become a model for the farmers of adjoining areas. The Vice-Chancellor assured the priests that the farm advisory staff of the university posted at the district level would provide them technical guidance on the spot.

ISM organises workshop on case developments

Keeping in view the potential of case method as a useful tool for teaching engineering subjects, the Department of Industrial Engineering and Management of Indian School of Mines organised recently a workshop on Case Development. Professor G.S. Marwaha, Director of the School, detailed the various pedagogical tools of teaching and highlighted the need for developing indigenous cases from the mineral industry. He recounted a number of events from the mineral industry, each of which could be developed into a good case.

The workshop generated keen involvement and lively discussions by the participants representing a wide cross-section of the teaching cadre. Professor J. Philip of the SAIL Management Training Institute said that Harvard was the first to use case method in management teaching and today it was MECCA of management education. He said some Institute has to take a similar lead in India to introduce case method in teaching of engineering subjects and the Indian School of Mines was making a pioneering attempt in this direction.

The participants recommended organisation of a second workshop on case method and preparation of a monograph containing engineering/management cases from mineral industry.

MBA course in Marathi

The Institute of Management Development and Research in Pune proposes to introduce full-time M.B.A. programme in Marathi. The admission to the two-year programme will be restricted to those coming from rural areas and sponsored by the industrial concerns and govern-

ment and semi-government agencies. The students would be given analytical training in the management of production, marketing, personnel and systems. They would also receive guidelines regarding the business potential in the rural area in the context of five year plans and the knowledge of behavioural pattern of the rural community. The students would then be associated with the community development projects, health and family welfare programmes and cooperative ventures.

Dr. P. C. Shejwalkar, Director of the Institute said additional management institutes should not be established unless they were prepared to undertake specialised activity in the rural sector.

Re-assessment of social service in university curriculum

The Academic Council of the Madras University at its recent meeting approved the Syndicate decision to delink community and social service (CSS) from performance in examinations in undergraduate and postgraduate courses. CSS was an integral part of the university curriculum linked with the performance of candidates in examination. The Academic Council shared the view of the Syndicate that several bright students lost their grades on account of their unsatisfactory performance in CSS. This was thought unjust. The Council was therefore of the view that although CSS should find a rightful place in the curriculum, the performance of the candidates in this field should be shown separately. CSS work has now fixed at thirty hours per semester for both undergraduate and postgraduate courses. Students assessed as "not satisfactory" will be required to improve their performance in CSS by undertaking such work in subsequent semesters and obtain at least the minimum level to be eligible for a degree. NSS, NCC and sports activities will be made part of the CSS.

Development of sports

Dr. P. C. Chunder, Union Education Minister, while speak-

ing at a luncheon given in his honour by the Indian Gymkhana Club in London, said there were many sports federations and associations in India and the same office bearers continued indefinitely. This was one of the greatest drawbacks in Indian sports. The Union Minister said he had tried to discourage this tendency through formulation of guidelines so that vested interests were not created. Government did not want to interfere in sports matters and exert any pressure on sports bodies. The reconstituted Sports Council was going ahead with the task of improvement of sports in the country. Dr. Chunder said a national sports policy was being drafted and will be placed before Parliament in the winter session. He would like sports in India to become broad-based, providing more facilities in villages.

Garhwal Varsity plan for study of Himalayas

The Institute of Himalayan Studies and Regional Development of Garhwal University will undertake a pilot project to study the recreational-cum-religious resources of the Garhwal Himalayas for scientific planning of tourism. The project has recently been approved by the University Grants Commission. Shri T. N. Dhar, Chairman of Garhwal Vikas Mandal has set up a task force on tourism to review the trends and recommend planning and development processes. Dr. Tejvir Singh, Director of the Institute of Himalayan Studies of the university will prepare a development plan of the area. He will be assisted by the research staff sanctioned by the Commission.

Revised rules for Arjuna Award

All recognised games and sports will now be considered for selection of outstanding sportsmen and sportswomen for Arjuna awards. Earlier, the games were restricted to thirty disciplines. The revised rules require that the awardee should possess the quality of leadership and a sense of discipline in addition to good per-

formance consistently for the previous three years at the national or international level, capped by an excellent performance during the year under review. The awardee will be entitled to a scholarship of Rs. 200 per month for two years. Free trip to witness national or international matches played in India will also be allowed to the awardee. The awards will now be valid for the financial year. The revised rules have been accepted by the government and made operative from 1977-78. Ordinarily not more than one award will be given in each sport. An exception can, however, be made in case of sportswomen.

Shivaji to organise faculty improvement programme

The Department of Geography of Shivaji University will organise a seven-day Faculty Improvement Programme on 'The Geographical Aspects of Rural Development Planning' from 2nd to 8th December, 1978. The programme will be organised with the assistance from University Grants Commission. Academics and others interested to participate in the programme may contact Professor N.P. Ayyar, Head of the University Department of Geography.

Science Research Scholarships and Fellowships for study in Egypt

The Union Ministry of Education and Social Welfare have invited applications for award of scholarships for post-graduate/post-doctoral studies in Arab Republic of Egypt and Science Research Scholarships of the Royal Commission for the exhibition of 1851 and Rutherford Scholarships of the Royal Society. The Scholarships for study in Egypt are available in the field of archaeology, museology, arabic language, literature and history. Science Research Scholarships will be awarded for experimental research in any branch of natural science.

Candidates with uniformly good academic record with a first class Master's degree are eligible for the awards.

The Department of Education of the Ministry in Shastri Bhavan, New Delhi, will entertain applications upto 30th November in case of scholarships for study in Egypt and 6th December in case of Science Research Scholarships.

Twelve scientists get awards

The Indian Council of Medical Research has selected twelve biomedical scientists for 1978 awards for their outstanding and original research.

The M. K. Seshadri award and gold medal for community medicine has been given to Dr. Shanti Ghosh, Paediatrician in Safdarjung Hospital. The Kamla Menon award for paediatrics has been given to Dr. P. M. Udani, Director & Professor at the Grant Medical College, Bombay. Dr. S. Kameswaran of Madras Medical College, has won the Basanti Devi Amir Chand prize. Dr. Vinodini Reddy of National Institute of Nutrition, Hyderabad has been awarded the Dr. P. N. Raju award in Nutrition. The Sandoz award and gold medal for cancer research has been won by Dr. S. P. Gothoskar of Cancer Research Institute, Bombay. Dr. Y. S. Narayana Rao Oration award in Microbiology has been given to Dr. Raj Narain. Dr. K. S. Singh, Professor at PGI, Chandigarh has been awarded the M. N. Sen award for practice of medicine. The Kshanika award has been won by Dr. Maharani Chakrabarti of Banaras Hindu University. The V. N. Patwardhan award for nutrition has been won by Dr. K. A. V. R. Krishnamachari. The Raja Ravi Sher Singh of Kalsia award for cancer has been awarded to Dr. Pradeep Seth of All India Institute of Medical Sciences. Dr. S. K. Bhattacharya of Banaras Hindu University and Dr. C. Bhaskaran of National Institute of Nutrition have won the Shakuntala Amir Chand award.

PM discussions with Gujarat VCs

Prime Minister Shri Morarji Desai during his discussions in Ahmedabad with the Vice-Chancellors of nine state universities of Gujarat emphasised the need for conducting university examinations in an impartial and disciplined manner. He said universities should be empowered to deal with those indulging in malpractices in the examinations. The Vice-Chancellors suggested that regular study at the university should not exceed five years to prevent politics from the campuses. The medium of instruction at the university level be changed to regional languages in a phased manner. Students and teachers should be encouraged to participate in rural development and adult education programmes which could be treated as a part of their attendance. The facility of university libraries and laboratories should be made available to the primary and secondary schools. The Vice-Chancellors agreed with the recommendation of the University Grants Commission to re-organise the first degree courses.

The State Education Minister, Mr. Navalbhai Shah and Prof. Satish Chandra, Chairman of the University Grants Commission also participated in the discussions.

Kurukshetra to institute Punjabi postgraduate department

Kurukshetra University proposes to establish postgraduate department for the study of Punjabi from the next academic session. The University has requested the state government to release the funds for the proposed department. Sanskrit and Punjabi have been recommended to be included as alternative compulsory subjects in addition to Hindi and English in the pre-university examinations. These changes have been recommended to the Academic Council of the university by the Language Pattern Committee.

Good Teachers

(Continued from page 1259)

was addressing when he made the incontrovertible observation: "He who learns from one occupied in learning, drinks of a running stream. He who learns from one who has learned all he is to teach, drinks the green mantle of the stagnant pool." If the pleading in the editorial is accepted, the number of such teachers and learners will increase.

In absence of research findings on the issue, reliance has to be placed on the opinion of those who have had continued occasion to supervise teaching and research and have themselves engaged in both the activities. The testimony from the West is unanimous. There is a general agreement among the English educators that there is no real anti-theses or separation. "The teacher's duty is both to teach, to train advanced workers and to do advanced work himself." The Calcutta University Commission expressed the sentiments of the British educators when it said: "The Professor who confined himself to private investigations in his own laboratory may make great discoveries, but he does not discharge his full duty in his university, which is a corporation of learning. Just as a university teacher is not likely to be of much use unless he is inspired with a desire to discover truth, so the researcher is scarcely likely to be of the highest value to his university unless he is eager to communicate the truth he is discovering, and to convey to other people, and especially to young and ardent minds, some thing of his own passion." President James B. Canant of Harvard speaks for the new world: "Able youngmen enlist in an enterprise only if they are persuaded that they, too, may contribute by creative work. A zest for intellectual adventure should be the characteristic of every university. In the future as in the past, our teachers must be scholars who are extending the frontiers of knowledge in every direction. I hope there will never be a separation of our faculty into those who teach and those who carry on creative work. No line should be drawn between teaching and research."

The editorial has not considered the full implications of its suggestions and of the consequent result in case of their acceptance. If the contention of dichotomy is accepted there will be not only two categories of university and college teachers as envisaged—those who have a special flare and fervour for teaching and others who are equally inclined towards research but three. Even in absence of all incentives positive and negative, there will be a third category who will be entrusted in both. Will the three form three parallel columns in the educational hierarchy? What will be the criteria for promotion from one tier to another in the hierarchy? Will the dual purpose men get preference over the other two? Will research have a place in a university if the top positions come to be occupied by non-researchers, as is most likely to happen in due course? Will it not amount to virtual ban on research?

The danger pointed out in the editorial that, "if youngmen and women are forced to conduct research as a pre-condition to becoming teachers, this may lower the quality of research," is however, real but not inevitable. It will depend on how the U.G.C. acts. Entry 66 of the seventh schedule list—Union List—gives to the Union Government the necessary power for "Coordination and determination of standards in institutions for higher education of research and scientific and technical institutions." The Govt. of India acts through the U.G.C. Sections 12-14 of the U.G.C. Act confer enough power on the U.G.C. for the performance of this function. There is nothing to prevent that august body from getting a number of the theses of

the Universities re-examined for the adjudication of standards. There could be other ways also to achieve the same end.

The editorial makes a concession. It suggests that, "The best compromise in the circumstances will be for the U.G.C. to lay down research experience as a desirable but not an essential qualification for recruitment in all Universities." May be a better course will be the other way round—to make the research qualification a normal requirement with a provision for relaxation in favour of candidates with a brilliant career from an Indian or foreign university—with a first class in each of the public examinations. They also should be required to obtain a Ph.D. degree within a specified period. The relaxation should attract the brilliant students to the teaching profession who otherwise would not opt for it. For positions higher than that of a Lecturer, division in different examinations should not have relevance. No one should be appointed a Professor unless his reputation as a researcher has travelled beyond the sea-shores of India and like-wise no one should be appointed as Associate Professor unless he is nationally known for his continuing research.

May the U.G.C. has the strength to resist pressure for lowering the qualifications for the teaching faculties in the Universities and colleges, even if the pressure is from such prestigious universities of Delhi. □

NAEP vital for development

Shri L. K. Advani, Union Information and Broadcasting Minister while inaugurating the All India Adult Education Conference in Coimbatore said that adult education was a significant factor in achieving the objective of area planning for integrated rural development. The Minister said the importance of adult education could not be overstated in the context of the sixth plan which lists adult literacy besides other programmes for providing the basic needs of people. He said adult education meant not merely adult literacy but functional skills to improve the contribution to national productivity. The Union Minister said the programme contained an element of mass participation involving the teachers, youth, students and voluntary agencies.

Plea to blend legal education with modernity

Shri Shanti Bhushan, Union Law Minister while inaugurating

the decennial celebrations of Kerala Law Academy in Trivandrum said that traditional pattern of training law students should be blended with modern concept of legal education so that they could contribute to the full realisation of basic democratic values. The role of law as an instrument of social progress through democratic ways was dynamic. The major task of legal education was to teach theory, philosophy and techniques of law and to review its application critically in the context of modern democratic society. The Union Minister said the law academics should concentrate on training the students in the science and art of advocacy as well as to provide opportunities to the younger generation to play their part in safeguarding and promoting the basic human values enshrined in our constitution. The Minister said the peculiarity of our constitution was that it was not a product of political revolution but a product of patient research and mature deliberations of distinguished representatives of the people.

PERSONAL

1. Dr Shakeelur Rehman has taken over as Vice-Chancellor of Bihar University, Muzaffarpur.
2. Dr. Ganpati Chandra Gupta has taken over as Vice-Chancellor of Himachal Pradesh University, Simla.
3. Shri K. M. Ahmad, has been appointed Vice-Chancellor of the Jawaharlal Nehru Technological University, Hyderabad.
4. Mr. J. Ragbotham Reddy has taken over as Vice-Chancellor of Andhra Pradesh Agricultural University, Hyderabad.
5. Dr. H. R. Kalia has taken over as Vice-Chancellor of Himachal Pradesh Krishi Vishwa Vidyalaya, Palampur.
6. Dr T.S. Murty, Vice-Chancellor, University of Saugar, has resumed duty after availing his earned leave.
7. Dr. V. Ramalingaswamy, Director, All India Institute of Medical Sciences has been elected President of the Indian National Science Academy for 1979-80.
8. Dr. D.S. Kothari, former Chairman of the UGC has been awarded the G.D. Parikh Memorial award for 1978 for his outstanding contribution in the field of education.
9. Professor R. Viswanathan of V. P. Chest Institute has been awarded the Carlsberg Gold Medal.
10. Dr Bhag Singh, a scientist in the Indian Council of Agricultural Research, has been awarded the late Fakhruddin Ahmed Award for agricultural research in tribal areas.
11. Dr. S.P. Kaushik of Postgraduate Institute of Medical Education & Research, Chandigarh, has been awarded the Hoechst Om Prakash Gold Medal.

Conferences, Seminars & Workshops

November-December, 1978

Date	Title	Venue	Sponsoring Body
20 Oct—4 Nov	Coherent optics & its applications in communications	Bangalore	Indian Inst of Science
20 Oct—4 Nov	Workshop in digital processing of geophysical maps	Bangalore	Indian Inst of Science
29 Oct— 4 Nov	5th international Congress on hormonal steroids	New Delhi	A.I.I.M.S.
1 Nov—21 Nov	Short term institute in Bryology	Annamalainagar	Annamalai Univ., Botany Deptt.
1 Nov—29 Nov	Refresher course in mathematics	Srinagar	Univ of Kashmir
3 Nov—6 Nov	Coomaraswamy Seminar	Chandigarh	Panjab University
5 November	Workshop on blood banking, enzymopathy & haemoglobinopathies	Bombay	Seth GS Med College, Parel & WHO
6 Nov— 7 Nov	The regulation of gonadal functions	Bombay	Inst for Res in Reproduction, ICMR & WHO
6 Nov— 7 Nov	Tutorial seminar on Satellite systems—applications & technology	New Delhi	Instn of Electronics & Telecommunication Engineers
6 Nov— 7 Nov	Workshop on new techniques in neuro sciences (with special reference to the neurophysiology of the higher nervous activity)	Bangalore	Nat. Institute of Mental Health and Neuro Sciences
6 Nov— 8 Nov	Interdisciplinary teaching in the field of life sciences and the role of microbiology	Baroda	MS Univ., Faculty of Science
6 Nov— 8 Dec	Refresher course in chemistry	Srinagar	University of Kashmir
6 Nov— 8 Nov	Symposium on brain pituitary adrenocortical inter-relationships	Varanasi	Inst of Med Sciences, B.H.U.
6 Nov—10 Nov	Management information systems	Bangalore	Indian Inst of Management
6 Nov—18 Nov	Personnel Management	New Delhi	Indian Inst of Public Admn.
6 Nov—20 Nov	Catalytic reaction engineering	Bangalore	Indian Inst of Science
6 Nov—20 Nov	Deep foundations	Bangalore	Indian Inst of Science
6 Nov—25 Nov	International seminar on remote sensing applications for agriculture *(one week in each place)	*Dehradun, Secunderabad & Ahmedabad	UN (F.A.O.) & Nat. Remote Sensing Agency
8 Nov—11 Nov	International conference on mental health information systems	New Delhi	W.H.O.
8 Nov—15 Nov	XI World conference of the International Council for Correspondence education	New Delhi (Ashoka Hotel)	I.C.C.E.
11 Nov—13 Nov	Seminar on engineering and health care	Mysore	Instrument Soc of India, Indian Inst of Science, Bangalore
13 Nov—18 Nov	Management in educational institutions	Bangalore	Indian Inst of Management
14 Nov—25 Nov	Seminar on management of human resources	Hyderabad	Administrative Staff College
15 Nov—25 Nov	Computers in management	New Delhi	Indian Inst of Public Admn.
15 Nov—15 Dec	Refresher course in Zoology	Srinagar	University of Kashmir
16 Nov—17 Nov	National Seminar on immobilised enzyme engineering	Calcutta	Jadavpur University
17 Nov—18 Nov	National Workshop on ancillary development	New Delhi	Inst of Marketing & Management
18 Nov—20 Nov	Seminar on Creativity in Music	Khairagarh	Indira Kala Sangit Vishwavidyalaya
18 Nov—20 Nov	Seminar on Govt. and politics in India	Pune	Tuljaram Chaturchand College
20 Nov—23 Nov	International Seminar on approaches towards increasing the potato production in developing countries	Simla	Indian Potato Association
20 Nov—25 Nov	Materials Planning	New Delhi	Indian Inst of Public Admn.
25 Nov—16 Dec	Course in Molecular biology and genetics	Bombay	Seth GS Med College, Pune
27 Nov—29 Nov	National conference on quality and reliability	Bombay	Mathematics Deptt., I.I.T.
27 Nov—30 Nov	Seminar on Literary historiography of Indian Languages	Chandigarh	Sheikh Baba Farid Dept of Medieval Ind. Lit. Panjab Univ.
27 Nov—2 Dec	Application of computers in mining	Dhanbad	Indian School of Mines
27 Nov—8 Dec	Development administration	New Delhi	Indian Inst of Public Admn.
29 Nov—30 Nov	5th Annual seminar on Finance for non-finance executives	New Delhi	Inst of Marketing & Management
30 Nov—8 Dec	English Literature Seminar	Trivandrum	Univ of Kerala & Bri. Council
End of November	Seminar on developments in biotechnology	Calcutta	Indian Inst of Chem. Engineers
1 Dec—4 Dec	International Symposium on biological applications of solar energy	Madurai	School of Biological Sciences, Madurai University
1 Dec—30 Dec	Summer School on stochastic processes & their applications	Bombay	I.I.T.
2 Dec—8 Dec	Workshop on geographical aspects of rural development planning	Kolhapur	Shivaji University
2 Dec—17 Dec	Experimental stress analysis & fracture mechanics	Bangalore	Indian Inst of Science
3 Dec—25 Dec	Winter School in solid state chemistry	Bangalore	Indian Inst of Science

Date	Title	Venue	Sponsoring Body
4 Dec—8 Dec	Annual Seminar & Sarda Ranganathan Lectures. Publication of Scientific & Technical papers by Indian Scientists	Bangalore	Documentation Research & Training Centre
4 Dec—9 Dec	Workshop on review of the surgical programme in family planning	New Delhi	W.H.O.
4 Dec—15 Dec	Effective management	Madras	Indian Inst of Management, Bangalore
4 Dec—23 Dec	Winter Institute in foundation engineering	Visakhapatnam	Andhra Univ, College of Engg.
4 Dec—24 Dec	Optical methods of measurement in engineering	Madras	I.I.T., Mech Engg. Department
5 Dec—8 Dec	18th CIOB World Management Congress	New Delhi	All India Management Assn.
5 Dec—9 Dec	IV High Energy Physics Symposium	Jaipur	Univ of Rajasthan
5 Dec—9 Dec	Workshop on behavioural skills in personnel—selection and interviewing	Bangalore	Indian Inst of Management
5 Dec—11 Dec	Symposium on mathematical modelling & its applications	Kanpur	I.I.T.
6 Dec—16 Dec	Training course on photosynthesis & bioproductivity	Madurai	School of Biological Sciences, Madurai University
7 Dec—9 Dec	All India Machine tool design & research conference	Bombay	Mechanical Engg Dept., I.I.T.
8 Dec—10 Dec	Seminar on illumination engineering and C.E.C.	Bombay	Instn of Engineers (India)
8 Dec—16 Dec	International seminar on resources engineering and technology	Bombay	Centre of Studies in Resources Engineering, I.I.T.
10 Dec—16 Dec	International Congress of Anthropological and Ethnological sciences on multilingualism: language use in education, administration and mass communication	New Delhi	Ranchi Univ., Deptt of Anthropology
11 Dec—14 Dec	6th National Symposium on refrigeration and airconditioning	Bombay	Mech. Engg. Deptt., I.I.T.
11 Dec—14 Dec	Third National symposium on cryogenics	Bombay	I.I.T.
11 Dec—16 Dec	Management of medical colleges	Bangalore	Indian Inst of Management & St. Johns Medical College
13 Dec—21 Dec	English Literature Seminar	Jaipur	Univ of Rajasthan & British Council
13 Dec—22 Dec	Financial Management techniques	New Delhi	Indian Inst of Public Admn.
15 Dec—17 Dec	Annual meeting of the Association of Medical Physicists of India	Vellore	A.M.P.I.
16 Dec—21 Dec	Inter-I.I.T. meet	Bombay	I.I.T.
18 Dec—23 Dec	Workshop on community participatory techniques in family health education	New Delhi	W.H.O.
18 Dec—30 Dec	Combustion Engineering	Dhanbad	Indian School of Mines
18 Dec—30 Dec	Operation research in mining industry	Dhanbad	Indian School of Mines
19 Dec—21 Dec	International Symposium on population structure & human variation	Bombay	Inst for Res in Reproduction and Indian Soc of Human Genet
19 Dec—21 Dec	Post-plenary session of the international congress of anthropological and ethnological sciences on multilingualism	Mysore	Central Institute of Indian Languages
20 Dec—22 Dec	Geocon-India: Conference on Geotechnical engineering	Delhi	I.I.T.
21 Dec—24 Dec	5th National conference on internal combustion engines & combustion	Warangal	Reg. Engg. College
22 Dec—24 Dec	5th Annual conference of the Indian Soc of Human Genetics	Bombay	Inst for Res in Reproduction (I.C.M.R.)
23 Dec—24 Dec	VIII annual conference of the Indian Academy of Cytology	Madras	Cancer Institute, Madras
23 Dec—26 Dec	Annual conference of the Indian Economic Association	Bombay	Bombay University
24 Dec—31 Dec	National high energy physics symposium	Bangalore	Indian Inst of Science
26 Dec—29 Dec	Computers for non-computer executives	Bangalore	Indian Inst of Management
26 Dec—29 Dec	Conference of Indian Society of Theoretical and applied mechanics	Warangal	Regional Engg. College
26 Dec—29 Dec	8th IASLIC Seminar	Madras	IASLIC
28 Dec—30 Dec	All India English Teachers Conference	Gaya, Bihar	A.I.E.T. Association
28 Dec—30 Dec	Annual conference of ISAE	Jorhat	Indian Soc of Agrl Economics,
28 Dec—31 Dec	Nuclear physics & solid state physics symposium	Bombay	Nuclear Physics Divn. B.A.R.C.
29 Dec—31 Dec	National Seminar on applications of acoustics and ultrasonics	Baroda	Applied Physics Deptt., MS Univ.
30 Dec—1 Jan	Seminar on problems of development in tribal areas	Warora (Maharashtra)	Anand Niketan College of Science, Arts & Commerce
31 December	Symposium on advances in satellite communications	Ahmedabad	I.E.T.E.
1st week of Dec	Teaching of Sociology, progress & problems	Hyderabad	Osmania University
Dec. (last week)	Training course on veterinary public health	New Delhi	W.H.O.
December 1978	Annual conference of the Indian Society of Pharmacology	Chandigarh	PG Inst of Med Edn & Research
December 1978	Symposium on host-parasite interaction	Madras	Dept of Zoology, Univ of Madras
Dec 78—Jan 79	Workshop on performance budgeting in banks	Baroda	MS University

Subject Index

Date	Title	Venue	Sponsoring Body
Agriculture			
28 Dec—30 Dec	Annual conference of ISAE	Jorhat	Indian Soc of Agri Economics
20 Nov—23 Nov	Internal Seminar on approaches towards increasing the potato production in developing countries	Simla	Indian Potato Association
6 Nov—25 Nov	International seminar on remote sensing applications for agriculture *(one week in each place)	* { Dehradun Secunderabad & Ahmedabad	UN (FAO) & Nat Remote Sensing Agency
The Arts			
3 Nov—6 Nov	Coomaraswamy Seminar	Chandigarh	Panjab University
18 Nov—20 Nov	Seminar on Creativity in music	Khairagarh	Indira Kala Sangit Viswavidyalaya
Computers & Mathematics			
26 Dec—29 Dec	Computers for non-computer executives	Bangalore	Indian Inst of Management
1 Nov—29 Nov	Refresher course in Mathematics	Srinagar	Univ of Kashmir
1 Dec—30 Dec	Summer school on stochastic processes and their applications	Bombay	I.I.T.
5 Dec—11 Dec	Symposium on mathematical modelling & its applications	Kanpur	I.I.T.
Economics			
23 Dec—26 Dec	Annual conference of the Indian Economic Association	Bombay	Bombay University
Dec 78—Jan 79	Workshop on performance budgeting in banks	Baroda	MS University
Education			
8 Nov—15 Nov	XI world conference of the International Council for correspondence education	New Delhi (Ashoka Hotel)	ICCE
13 Nov—18 Nov	Management in educational institutions	Bangalore	Indian Inst of Management
Engineering			
7 Dec—9 Dec	All India machine tool design & research conference	Bombay	Mechanical Engg Dept., IIT
6 Nov—20 Nov	Catalytic reaction engineering	Bangalore	Indian Inst of Science
18 Dec—30 Dec	Combustion Engineering	Dhanbad	Indian School of Mines
26 Dec—29 Dec	Conference of Indian Society of theoretical & applied mechanics	Warangal	Regional Engg College
6 Nov—20 Nov	Deep foundations	Bangalore	Indian Inst of Science
2 Nov—17 Nov	Experimental stress analysis and fracture mechanics	Bangalore	Indian Inst of Science
21 Dec—24 Dec	5th National conference on internal combustion engines & combustion	Warangal	Regional Engg. College
20 Dec—22 Dec	Geocon-India: conference on Geotechnical engineering	Delhi	I.I.T.
8 Dec—16 Dec	International seminar on resources engineering & technology	Bombay	Centre of Studies in Resources Engg. IIT
4 Dec—24 Dec	Optical methods of measurement in engineering	Madras	IIT, Mech Engg. Department
11 Nov—13 Nov	Seminar on engineering and health care	Mysore	Instrument Soc of India, Indian Inst of Science, Bangalore
8 Dec—10 Dec	Seminar on illumination engineering and CEC	Bombay	Instn of Engineers (India)
11 Dec—14 Dec	Sixth National symposium on refrigeration & airconditioning	Bombay	Mech Engg Deptt., IIT
4 Dec—23 Dec	Winter Institute in foundation engineering	Visakhapatnam	Andhra Univ, College of Engg.
Geography			
20 Oct—4 Nov	Workshop in digital processing of geophysical maps	Bangalore	Indian Inst of Science
Language and Literature			
28 Dec—30 Dec	All India English Teachers Conference	Gaya, Bihar	A.I.E.T. Association
30 Nov—8 Dec	English Literature Seminar	Trivandrum	Univ of Kerala & Br. Council
13 Dec—21 Dec	English Literature Seminar	Jaipur	Univ of Rajasthan & Br Council
27 Nov—30 Nov	Seminar on Literary historiography of Indian Languages	Chandigarh	Sheikh Baba Farid Deptt of Med Ind Lit, Panjab Univ
Library & Information Sciences			
4 Dec—8 Dec	Annual Seminar and Sarda Ranganathan Lectures. Publication of Scientific & Technical papers by Indian Scientists	Bangalore	Documentation Res & Training Centre
26 Dec—29 Dec	8th IASLIC Seminar	Madras	IASLIC
Life Sciences			
25 Nov—16 Dec	Course in Molecular biology and genetics	Bombay	Seth GS Med College, Parel
22 Dec—24 Dec	5th Annual conference of the Indian Society of Human Genetics	Bombay	Inst for Res in Reproduction (ICMR)
6 Nov—8 Nov	Interdisciplinary teaching in the field of life sciences and the role of microbiology	Baroda	MS University, Faculty of Science
10 Dec—16 Dec	International congress of Anthropological and Ethnological Sciences on multilingualism: language use in education, administration and mass communication	New Delhi	Ranchi Univ., Deptt of Anthropology
1 Dec—4 Dec	International symposium on biological applications of solar energy	Madurai	School of Biological Sciences, Madurai University
19 Dec—21 Dec	International symposium on population structure & human variation	Bombay	Inst for Res in Reproduction and Indian Soc of Human Genetics
16 Nov—17 Nov	National seminar on immobilised enzyme engineering	Calcutta	Jadavpur University
19 Dec—21 Dec	Post-plenary session of the international congress of anthropological & ethnological sciences on multilingualism	Mysore	Central Inst of Indian Languages

Date	Title	Venue	Sponsoring Body
15 Nov—15 Dec	Refresher course in Zoology	Srinagar	Univ of Kashmir
End of November	Seminar on developments in biotechnology	Calcutta	Indian Inst of Chem Engineers
1 Nov—21 Nov	Short term institute in Bryology	Annamalainagar	Annamalai Univ., Bot Deptt.
December 1978	Symposium on host-parasite interaction	Madras	Dept of Zool, Univ of Madras
6 Dec—16 Dec	Training course on photosynthesis and bioproductivity	Madurai	School of Biological Sciences, Madurai University
Management			
15 Nov—25 Nov	Computers in Management	New Delhi	Indian Inst of Public Admn.
4 Dec—15 Dec	Effective management	Madras	Ind Inst of Mgt, Bangalore
5 Dec—8 Dec	18th CIOS World Management Congress	New Delhi	All India Management Assn.
29 Nov—30 Nov	5th Annual seminar on finance for non-finance executives	New Delhi	Inst of Marketing & Management
13 Dec—22 Dec	Financial management techniques	New Delhi	Indian Inst of Pub Admn.
6 Nov—10 Nov	Management information systems	Bangalore	Indian Inst of Management
20 Nov—25 Nov	Materials planning	New Delhi	Indian Inst of Public Admn
17 Nov—18 Nov	National Workshop in ancillary development	New Delhi	Inst of Marketing & Management
6 Nov—18 Nov	Personnel Management	New Delhi	Indian Inst of Public Admn
14 Nov—25 Nov	Seminar on Management of human resources	Hyderabad	Administrative Staff College
5 Dec—9 Dec	Workshop on behavioural skills in personnel-selection & interviewing	Bangalore	Indian Institute of Management
Medicine & Public Health			
December 1978	Annual conference of the Indian Society of Pharmacology	Chandigarh	PG Inst of Med Edn. & Research
15 Dec—17 Dec	Annual meeting of the Association of Medical Physicists of India	Vellore	A.M.P.I.
23 Dec—24 Dec	VIII annual conference of the Indian Academy of Cytology	Madras	Cancer Institute, Madras
29 Oct—4 Nov	5th international congress on hormonal steroids	New Delhi	AIIMS
8 Nov—11 Nov	International conference on mental health information systems	New Delhi	WHO
11 Dec—16 Dec	Management of medical colleges	Bangalore	Indian Inst of Management & St. Johns Medical College
6 Nov—7 Nov	The regulation of gonadal functions	Bombay	Inst for Res in Reproduction, (ICMR & WHO)
6 Nov—8 Nov	Symposium on brain pituitary adrenocortical interrelationships	Varanasi	Inst of Med Sciences, B.H.U.
Dec (Last Week)	Training course on veterinary public health	New Delhi	W.H.O.
5 November	Workshop on blood banking, enzymopathy and haemoglobinopathies	Bombay	Seth GS Med College, Parel & WHO
6 Nov—7 Nov	Workshop on new techniques in neuro sciences (with special reference to the neurophysiology of the higher nervous activity)	Bangalore	Nat Inst of Mental Health and Neuro Sciences
4 Dec—9 Dec	Workshop on review of the surgical programme in family planning	New Delhi	W.H.O.
Mining & Minerals			
27 Nov—2 Dec	Application of computers in mining	Dhanbad	Indian School of Mines
18 Dec—30 Dec	Operation research in mining industry	Dhanbad	Indian School of Mines
Physics & Chemistry			
20 Oct—4 Nov	Coherent optics and its applications in communication	Bangalore	Indian Inst of Science
5 Dec—9 Dec	IV High Energy Physics symposium	Jaipur	University of Rajasthan
24 Dec—31 Dec	National high energy physics symposium	Bangalore	Indian Inst of Science
29 Dec—31 Dec	National Seminar on applications of acoustics & ultrasonics	Baroda	Applied Physics Dept., MS University
28 Dec—31 Dec	Nuclear physics and solid state physics symposium	Bombay	Nuclear Phy Divn., B.A.R.C.
6 Nov—8 Dec	Refresher course in chemistry	Srinagar	Univ of Kashmir
3 Dec—25 Dec	Winter School in solid state chemistry	Bangalore	Indian Inst of Science
Political Science			
18 Nov—20 Nov	Seminar on govt. and politics in India	Pune	Tuljaram Chaturchand college
Rural Development & Population Control			
27 Nov—8 Dec	Development Administration	New Delhi	Indian Inst of Public Admn.
30 Dec—1 Jan 79	Seminar on problems of development in tribal areas	Warora (Maharashtra)	Anand Niketan College of Science, Arts & Commerce
18 Dec—23 Dec	Workshop on community participatory techniques in family health education	New Delhi	W.H.O.
2 Dec—8 Dec	Workshop on geographical aspects of rural development planning	Kolhapur	Shivaji University
Sociology			
1st week of Dec	Teaching of sociology, progress and problems	Hyderabad	Osmania University
Technology			
16 Dec—21 Dec	Inter-IIT Meet	Bombay	IIT
27 Nov—29 Nov	National conference on quality and reliability	Bombay	Mathematics Dept., IIT
31 December	Symposium on advances in satellite communication	Ahmedabad	IETE
11 Dec—14 Dec	Third National symposium on Cryogenics	Bombay	IIT
6 Nov—7 Nov	Tutorial seminar on satellite systems - applications and Technology	New Delhi	Instn of Electronics and Telecommunication Engineers

Further details can be had from :
THE BRITISH COUNCIL LIBRARY
AIFACS Building, Rafi Marg, New Delhi-110001

A list of Doctoral Theses Accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Harbans Lal. A study of quasi-commutative semi-groups, regular ideals and radicals. University of Delhi.
2. Jana, Mihir Kumar. Analysis of viscoelastic solids with arbitrary geometry and loading. University of Kerala.
3. Sivasubramanian, K. On the space of functions whose n th differences satisfy Lipschitz's condition. University of Madras.
4. Venkatasubramanian, N.K. Bending and flexure of a micropolar elastic circular cylinder under terminal loads. University of Madras.

Operational Research

1. Dharam Pal. Mathematical analysis of waiting line problems. University of Delhi.

Astronomy

1. Pasricha, Pradeep Kumar. A study of equatorial ionospheric scintillation at 327 MHz. University of Delhi.
2. Raina, Vinod. The relation between resonance integral and overlap integral in molecular quantum mechanics: An investigation based on analysis of model systems. University of Delhi.
3. Virendra Shanker. Point defects in polycrystalline calcium sulphide. University of Delhi.

Physics

1. Agrawal, Dev Prakash. Some studies on flow through radial vaned diffusers. Indian Institute of Technology, Delhi.
2. Bhaumik, Dharmajyoti. Theoretical studies on ground and excited states properties of polyatomic molecules. University of Calcutta.
3. Chakrabarti, Sankar. Characteristics of electronic spectra of some organic compounds in different states. University of Calcutta.
4. Chandel, Sham S. Relativistic electron scattering from a two-centre potential. Himachal Pradesh University.
5. Mathew, K.T. Beam shaping of sectoral electromagnetic horn antennas using corner regulator technique. University of Cochin.
6. Sharma, Jai Kishan. Filamentation instability in plasmas. Indian Institute of Technology, Delhi.

Chemistry

1. Adi, M.B. Study of complexes of rare metals utilising thiourea and its derivatives as ligands. Karnatak University.
2. Aggarwal, S.K. Thermodynamic and transport studies of some solutions involving mixed solvents. Himachal Pradesh University.
3. Banerjee, Arindam. Sprayed CdS and alloy films for photovoltaic conversion. Indian Institute of Technology, Delhi.
4. Chander Kanta. A study of chemical constituents of some Indian plants. University of Delhi.
5. Das, Suhit Ranjan. CdS based thin film solar cells. Indian Institute of Technology, Delhi.
6. Khune, Gajendra Devidas. Studies on the condensation of aldehydes and amines. Shivaji University.
7. Madhusudan, P.M. Studies on the thermal behaviour of some metal salts and complexes. University of Kerala.
8. Mahajan, Vijay Kumar. Stereochemistry of some oxygenated cedrane derivatives: Dehalogenations with Cr(II), epoxide formation, allyl alcohol oxidations and hydride reductions. University of Delhi.

9. Mukhopadhyay, Taritkumar. Studies on clay humus interaction. University of Calcutta.

10. Ramesh Chander. Synthetic studies in some naturally occurring isopentenylated chalcones, flavanones and flavones. Himachal Pradesh University.

11. Sanyal, Utpal. Synthetic studies on sesterterpenes. University of Calcutta.

12. Sharda, Rekha. Chemical investigation of Cannabis sativa (Marihuana) of Indian origin and the seeds of Sisymbrium irio L. University of Delhi.

13. Tuli, Deepak Kumar. Synthetic Studies in naturally occurring isopentenylated isoflavones and related compounds. Himachal Pradesh University.

14. Venkateswara Rao, Tenneti. Metallopolymer films. Indian Institute of Technology, Delhi.

15. Yadav, Brijpal. Coordination chemistry of alkali cautions: Kojic acid and its methyl ethers as ligands. University of Indore.

Engineering & Technology

1. Dube, Janhavi Narain. Dynamic analysis of milling machine structure. Indian Institute of Technology, Delhi.
2. Linga Reddy, Potla. Some studies on the control and estimation in power systems through system sub-division. Indian Institute of Technology, Delhi.
3. Paliwal, Laxmi Narain. Large scale power system dynamic modelling and simulation: A graph theoretic approach. Indian Institute of Technology, Delhi.
4. Rangaswami, T. Studies on sand systems for high pressure moulding process. Sri Venkateswara University.
5. Tiwari, R.N. Free and forced oscillations in a class of nonlinear systems. Indian Institute of Technology, Kanpur.
6. Venkataraman, P. Some studies on spatially varied flow in open channels with decreasing discharge. Sri Venkateswara University.
7. Vijayaraghavan, N. Effect of some carding parameters on carding force and performance in a flat card. Indian Institute of Technology, Delhi.
8. Vinod Chandra. A new system for automatic detection of trains. Indian Institute of Technology, Delhi.

BIOLOGICAL SCIENCES

Anthropology

1. Chand Rani. A study of body density, body volume, leg volume and arm volume of Punjabi females. University of Delhi.

Botany

1. Anand Bahadur Singh. Studies on atmospheric pollen of Delhi with reference to respiratory allergy. University of Delhi.
2. Das, Binayak. Effect of herbicide and pesticide on the blue green algae of freshwater ponds. Utkal University.
3. Janardhan, K.V. Studies on carbon assimilation in rice, *Oryza sativa* L. Utkal University.
4. Mathew, Kuruvilla. Studies on a sea anemone, *Anthopleura nigrescens* (Verrill) from the South West Coast of India. University of Cochin.
5. Nayyar, Vijay Laxmi. Ultrastructural and compositional changes in the cotyledons of pigeon pea (*Cajanus cajan*) during seed development and germination. University of Delhi.
6. Padhy, Rabindranath. Studies on algal virus N-1 infecting the nitrogen fixing blue-green alga *Nostoc muscorum*. Utkal University.

7. Raychaudhuri, Arati. Analysis of human genetic polymorphism following electrophoretic techniques and use of auto-effects on chromosomes of *Vicia faba*. University of Calcutta.

8. Tembhurnikar, Shirang Tilu. Genetics of disease resistance to bacterial blight disease of rice. Marathwada University.

9. Veeraraghavan, J. Studies on the nature of resistance in rice to *Pyricularia oryzae* Cav. Utkal University.

Zoology

1. Balasundar Reddy, Pyreddy. Studies on the taxonomy of Indian species of family Channidae (Pisces, Teleostei) and some aspects of the biology of *Channa punctata* (Bloch, 1973) from Guntur, Andhra Pradesh. Andhra University.

2. Chandra, Asit Kumar. Morphology, taxonomy and population density of the opalinid fauna from anuran amphibians in West Bengal. University of Calcutta.

3. Chandrashekhar, Raje Prakash. Studies on behaviour and physiology of the *Metapenaeus affinis* (Milne-Edwards). Shivaji University.

4. Grewal, Satwant. Experimental studies on the neuroendocrine regulation of pregnancy in the albino rat. University of Delhi.

5. Jain, Suresh Chander. Investigations on the inhibition of weeds of soyabean, *Glycine max* (L) Merrill through

the use of plant growth regulating and other herbicides in Malwa Region of Madhya Pradesh. University of Indore.

6. Sengupta, Rita. Comparative study of the internal reproductive organs in male and female crab, *Scylla serrata* forskal. University of Calcutta.

Medical Sciences

1. Bharati, R. Sarasa. An enquiry into the histogenesis of intracranial tumours induced into small animals by chemical methods and a comparative study with human tumours. University of Madras.

2. Parmar, Narayan Singh. A pharmacological study on the effects of bioflavonoids on experimentally induced inflammation, increased vascular permeability, gastric ulcers and cataracts. University of Madras.

Agriculture

1. Basu, Pahari. Study on certain quantitative aspects of genetic variability in *Dolichas biflorus* L. University of Calcutta.

2. Ghorai, Durgapada. Genetical studies in some *Oryza* species. University of Calcutta.

3. Sharma, Ved Prakash. The effect of feed restriction on the performance of egg type pullet. Haryana Agricultural University.

Additions to AIU Library

All India Adult Education Conference, Jaipur, 1973, *Adult education and national development: Report*, Delhi, Indian Adult Education Association, 1976, 55p.

Association of Indian Universities, Delhi. *Monograph on question banking in English language and literature for universities*. Delhi, Author, 1978. 144p.

——— *Question bank book series, 20 Political Science*. Delhi, Author, 1978. 321p.

Beckett, Paul and O'Connell, James. *Education and power in Nigeria: A study of university students*. London, Hodder and Stoughton, 1977. 224p.

Bose, P. K. *Higher education at cross roads*. Calcutta, World Press, 1977. xii, 111p.

Carson, Sean McB., ed. *Environmental education: Principles and practice*. London, Arnold, 1978. xiv, 258p.

Gamberg, Ruth. *Red and expert: Education in the People's Republic of China*. New York, Schocken, 1977. xv, 299p.

Ghose, Sisirkumar. *Man and society: As on a darkling plain*. Delhi, intellectual, (c 1977). viii 102p.

Habermas, Jurgen. *Knowledge and human interests*. Ed 2. London, Heinemann, 1978. viii 392p.

India. Department of Education. Statistics and Planning Division. *Expenditure on education as shown in central and state annual budgets 1974-75 to 1976-77* compiled from the budget estimates of 1976-77. Delhi, Author, 1976, iv, 165p.

India. University Grants Commission. *3rd All-India educational survey (on) higher education 1973-74*. Delhi, Author, 1978. 502p.

Indian Council of Agricultural Research, Delhi. *Agricultural research and education: Recent progress*. Delhi, Author (c 1977). 113p.

International Labour Office, Geneva. *Employment, growth and basic needs: A one-world problem—the international "basic-needs strategy" against chronic poverty*. New York, Praeger, 1977. xi, 223p.

McDonell, W. *Testing for student selection at tertiary level: A literature review*. Hawthorn, Australian Council for Educational Research, 1976. 79p.

National Council of Educational Research and Training.

Innovations in education in India: Report of the National Seminar, 19-21 April 1976. Delhi, Author, 1977. 12p.

National Workshop and Symposium on Non-formal Education for School Dropouts and Youth, Bombay and Mysore, 1975. *Report*. Delhi, Indian Adult Education Association, 1976. 40p.

Rakshit, Gangadhar. *Poverty and planning in India*. Calcutta, World Press, 1977 xii, 160p.

Ramage, Ian A. *Investment of university funds: A report on investment practices in universities visited in U.S.A., U.K. and Canada from Nov. 1975 to May 1976*. Sydney, University of Sydney, 1976. 23p.

Review Committee on Agricultural Universities (1977) (Chairman: M.S. Randhawa). *Report*. Delhi, ICAR, 1978. 319p.

Reynolds, John and Skilbeck, Malcolm. *Culture and the classroom*. London, Open Books, (c 1976). ix, 134p.

Sarmah, Jogeswar. *Philosophy of education in the Upanisads*. Delhi, Oriental, 1978. xv, 303p.

Shah, A.B., ed. *Social context of education: Essays in honour of Professor J.P. Naik*. Bombay, Allied, (c 1978), xxii, 276p.

Sharma, Krishan Dev. *Education of a national minority: A case study of muslim community in Delhi*. Delhi, Kalamkar, (c 1978). xvi, 263p.

Shouksmith, George. *Assessment through interviewing*. Oxford, Pergamon. (c 1978). viii, 149p.

Srivastava, H.C. *Intellectuals in contemporary India*. Delhi, Heritage, v, 160p.

Subramoniam, V.I., ed. *Teaching of Indian languages: Seminar papers*. Trivandrum, University of Kerala, 1975. ix, 195p.

Suraj Bhan and Dutt, N.K. *Mental health through education*. Delhi, Vision (c 1978). xi, 128p.

Swingewood, Alan. *Myth of mass culture*. London, Macmillan (c 1977). xii, 146p.

Uday Shanker. *Exceptional children*. Delhi, Sterling (c 1976), vi 220p.

Vijai Govind and Chhotey Lal. *Higher education in India: A bibliography*. Delhi, ESS ESS (c 1978), vi, 229p.

POST GRADUATE SCHOOL OF CONTINUING TECHNO- LOGICAL EDUCATION

**Jawaharlal Nehru Technological
University, A.P.**

HYDERABAD-500 488

**External Registration for M.S. and
Ph.D., Degrees-January, 1979**

The Post Graduate School invites applications for external registration for M.S., and Ph.D., degrees in the following areas of disciplines:

MS: Civil Engineering; Mechanical Engineering; Electrical Engineering; Electronics & Telecommunication Engineering and Industrial Engineering.

PhD: Civil Engineering; Mechanical Engineering; Electrical Engineering; Electronics & Communication Engineering; Applied Mathematics; Applied Physics and Applied Chemistry.

Eligibility

Qualification for MS: Candidates must possess a First Class Bachelor's degree in related branch of Engineering/Technology (relaxable to Second Class in exceptional cases) with a minimum of one year experience.

Qualification for PhD: Master's degree in related discipline with a minimum of 2 years experience.

In either case only those who are working in well equipped Universities/Colleges/Scientific Institutions/ R & D establishments/Industrial Organisations will be considered.

Application forms and prospectus can be had on requisition from the undersigned accompanied by a crossed postal order (issued after the date of notification) for Rs. 6/- payable to the Registrar, Jawaharlal Nehru Technological University, Hyderabad, at JNT University Post Officer Hyderabad-500488 and a self addressed envelope (25 cms x 10 cms) bearing stamps worth 70 ps. In the requisition, the particular course to which registration is sought should be specified. Application forms issued after the date of notification only will be valid.

The last date for receipt of Applications with Full Particulars is 10-12-78.

DIRECTOR

INDIAN INSTITUTE OF TECHNOLOGY

Kanpur-208016

Advertisement No. 27/78

Applications are invited for the following posts in the Institute in the pay scales noted against each:

1. Professor
Rs. 1500-60-1800-100-2000-125/2-2500
2. Assistant Professor
Rs. 1200-50-1300-60-1900
3. Lecturer
Rs. 700-40-1100-50-1600
4. Placement Officer
Rs. 1200-50-1300-60-1900

OR

**Assistant Placement Officer
Rs. 700-40-1100-50-1600**

The Department of Chemical Engineering, Mechanical Engineering, Electrical Engineering and Humanities & Social Sciences are seeking individuals to fill up the teaching positions with ability and aptitude for teaching in undergraduate/post-graduate programme, research and development in any of the areas of specialization listed under each. However, applications from outstanding candidates in other areas in the Engineering Departments may also be considered. The number of positions available in each of the departments are also indicated below:

DEPARTMENT OF CHEMICAL ENGINEERING: (Professor, Assistant Professor & Lecturer)

1. Process dynamics/control, simulation, optimization and process engineering.
2. Chemical reaction engineering, chemical thermodynamics and transport phenomena,
3. Energetics, environmental pollution and control, natural products, petroleum processing, petrochemical coal gasification, polymers, biochemical and biomedical engineering.

Number of Positions: 10 (Ten)

The Department has an energetic and young faculty, and active post-graduate programme. The department is actively involved in sponsored research and development projects funded by Governmental agencies and industry. There are well equipped laboratories in the departments.

DEPARTMENT OF MECHANICAL ENGINEERING: (Assistant Professor and Lecturer)

1. Manufacturing Science
2. Design
3. Automatic Controls
4. Solid Mechanics
5. Fluid Mechanics
6. Thermal Sciences

Number of Positions: 10 (Ten)

The Department has an energetic and young faculty of thirty-two and is actively involved in research in all the areas mentioned above. It has an active post-graduate programme. The department is also involved in sponsored research projects funded by various Governmental agencies and industry. The laboratories are well equipped.

DEPARTMENT OF ELECTRICAL ENGINEERING: (Assistant Professor and Lecturer)

(i) Power Systems (ii) Electronic Circuits (iii) Communications (iv) Computers (v) Controls and (vi) Networks and Systems, Specialised experience in any one of the following is desirable:

Power System security and Reliability, High Voltage Engineering, Digital and Linear Circuit Design, Integrated Circuit Design, Device Modelling, Computer added Design, Active Networks, Instrumentation and Transducers, Digi-

tal Communication, Optical Communication, Signal Processing, Computer Architecture Microprocessor Applications, Real Time Computer Control, Bioelectronics and Design of Heavy Electrical Machines.

The Department of Electrical Engineering has, at present 35 faculty members and an active post-graduate programme with about 40 Ph.D. students and 100 M. Tech. students. The department is actively involved in sponsored research and development projects funded by Governmental agencies and industry.

DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES: (Asstt. Professor and Lecturer)

(a) **Economics:** Economic Theory, Industrial Economics, Development Economics and Econometrics.

(b) **Sociology:** Research Methodology, Statistics, Industrial Sociology, Urban Sociology, Science and Technology Policy and Assessment, Sociology of Development, Organization Theory and Sociology of Administration and Political Sociology.

(The area of specialisations indicated above may be interpreted broadly. Preference would be given to candidates for Sociology with a quantitative background and strong interest in research methodology and/or theory.

Number of Positions: 4 (Four)

PLACEMENT/ASSISTANT PLACEMENT OFFICER

The Student Placement and Training Office explores employment possibilities and acts as liaison between the graduating students and industrial/research organisations. It organises on campus recruitment programme by inviting representatives from various organisations and organises training programme in industrial organisations for final year engineering students. The office also assists the students in career planning, preparation of resume/bio-data etc.

QUALIFICATION FOR VARIOUS POSITIONS

Professor: Doctorate degree with good academic record and at least eight years of professional experience of good quality outside the work for the degree.

OR

M. Tech. with good academic record and atleast fifteen years of industrial experience with brilliant record outside the work for the degree.

The candidates must have demonstrated ability of independence in teaching and research with significant contribution in the area of specialisation evinced by the adequate number of research publications of good quality in journals of repute and/or developmental project report of equivalent merit based on

the work outside the candidate's own thesis.

Assistant Professor

: Doctorate degree with good academic record and atleast three years of professional experience outside the work for degrees.

OR

M.Tech. with academic record and atleast seven years of industrial experience with good record outside the work for degree.

The candidates must have potential for independence in teaching and independent research work as demonstrated by adequate number of publications of good quality in journals of repute outside the candidate's own thesis, or equivalent development work done.

Lecturer : Doctorate degree with a good academic record and adequate research experience resulting in research papers of good quality.

OR

M.Tech. with good academic record and atleast three years of teaching research/industrial experience with good record outside the work done for degree.

For the positions in the Department of Humanities & Social Sciences, the qualification with M.Tech. degree do not hold. For positions in Engineering Departments, basic degree in respective branch of engineering is required.

The Institute encourages persons From industry to come as Visiting Professors/Assistant Professors for a year or two.

Placement Officer : M.Tech. with 7 years experience in handling training programmes and placement activities.

Assistant Placement Officer

: M.Tech. with 3 years experience of handling training programmes and placement activities.

Candidates who have Bachelor's Degree in Engineering and possess long experience in Industry/Training and Placement will also be considered for these posts.

The Appointment on the post of Placement Officer/Assistant Placement Officer may be made initially on contract for a period of 3 years.

The Indian Institute of Technology, Kanpur offers B.Tech., M.Tech., and Ph.D. degrees in Engineering (Aeronautical, Chemical, Civil, Electrical, Mechanical and Metallurgical). In addition to these, post-graduate programmes leading to M.Sc. and Ph.D. degrees in Physics, Chemistry and Mathematics. M.Tech. and Ph.D. degrees in Computer Science, Material Science, Nuclear

Engineering and Technology and Industrial and Management Engineering, Ph.D. degree in Economics, Psychology Sociology and English, are also offered.

The Institute has well equipped laboratories and also a Biosystems Laboratory, Laser Laboratory, besides central facilities. There is a well established Computer Centre with IBM 7044, IBM 1401, IBM 1800, PDP-1 Systems with interactive graphic terminals and TDC-316 and a group of experienced programmers. IBM 7044/1401 will be replaced by DEC 1090 shortly. The IIT/Kanpur has a well stacked library with more than 150,000 volumes and 1,300 periodicals. The Central facilities include 2 MV Van de Graaff accelerator, 4096 multichannel analyser and other radiation detection equipment, liquid nitrogen and liquid helium plants, NMR, EPR, Mass Spectrometer, X-ray plant, UV and IR spectrometers, glass blowing shop, crystal growth facility, central instrumentation laboratory, precision machine shop, electron microscope besides a large workshop for fabrication of specialised research apparatus.

There is an Advanced Centre for Electronic Systems at the Institute. The Centre has been sponsored by the Ministry of Defence to carry out training and unclassified research and development work in the areas of communication and radar. Besides, an Advanced Centre for Materials Science has been established recently at the Institute by the Government of India to undertake research in the frontiers of development on materials of national importance.

The campus facilities include a Primary and Higher Secondary School, a Health Centre and Shopping Centre.

Posts are permanent and carry retirement benefits in the shape of CPF Scheme or CPF-cum-Gratuity Scheme or GPF-cum-Pension-cum-Gratuity Scheme, as may be opted according to rules. The age of retirement is 60 years. During the first year, the appointment will be on probation. Besides pay, posts carry allowances according to the Institute rules, which at present correspond to those admissible to the Central Government employees stationed at Kanpur. Higher initial pay is admissible to exceptionally qualified and deserving candidates. Candidates called for interview will be paid second class railway fare from the place of duty to Kanpur and back by the shortest route.

In the category of Lecturer, one post in each of the Department will be reserved for SC/ST candidates. In the event of non-availability of suitable SC/ST candidates, the reserved posts would be treated as dereserved.

Applications from within India must be made on prescribed form obtainable free of charge from the Registrar of the Institute by sending a self-addressed unstamped envelope of 25 cm x 10 cm size. Applications should be accompanied by a postal order for Rs. 7.50 (Rs. 1.87 for SC/ST candidates).

Applicants who are employed in a Government/Semi-Govt. organisations or Institutions should send their appli-

cations through proper channel, else they will be required to produce a 'No OBJECTION CERTIFICATE' from their employers at the time of interview.

Applicants from abroad may apply on plain paper enclosing a complete biodata and names of three referees from whom reference letters may be obtained.

Applications should reach the Registrar, Indian Institute of Technology, IIT Post Office, Kanpur-208016 (INDIA) on or before November 30, 1978.

INDIAN INSTITUTE OF TECHNOLOGY KANPUR Kanpur-208016

Advertisement No. 29/78

Applications are invited for the post of Assistant Registrar in the pay scale of Rs. 700-40-900-EB-40-1100-50-1300 at this Institute.

QUALIFICATIONS & EXPERIENCE Essential

1. Good degree in Arts, Science, Commerce or Business Management.
2. Must have good knowledge of procedure of general administration or accounting of cash and other transactions preferably both and be able to draft reports and minutes of conferences.
3. At least 10 years' experience in a responsible position under Government or in a large educational Institution or business organisation of repute.

Desirable

Experience of supervision of examination work, student welfare work, proved capacity to understand students and their problems.

The requirement of experience may be relaxed in case of candidates with excellent academic record and/or training in management.

Post is permanent and carry retirement benefits in the shape of CPF Scheme or CPF-cum-Gratuity Scheme or GPF-cum-Pension-cum-Gratuity Scheme as may be opted according to rules. The age of retirement is 60 years. During the first year, the appointment will be on probation. Besides pay, post carry allowances according to the Institute rules, which at present correspond to those admissible to the Central Government employees stationed at Kanpur. Higher initial pay is admissible to exceptionally qualified and deserving candidates. Candidates called for interview will be paid second class railway fare from the place of duty to Kanpur and back by the shortest route.

Applications must be made on prescribed form obtainable free of charge from the Registrar of the Institute by sending a self addressed unstamped envelope of 25 cm x 10 cm size. Application should be accompanied by a postal order for Rs. 7.50 (1.87 for SC/ST candidates).

Applications should reach the Registrar, Indian Institute of Technology, IIT Post Office, Kanpur-208016 (India) on or before December 15, 1978.

SAMBALPUR UNIVERSITY

Jyoti Vihar, Burla

Advertisement No. 18689/TDS

Dated the 4.11.78

Applications with attested copies of marksheets and certificates of all examinations passed are invited for the following posts:

Category 'A'—For University Post-graduate Department.

1. Reader in Statistics—Two posts
2. Reader in Political Science—One post
3. Lecturer in Home Science and Mathematics—One post each

Category-'B'—For U.C.E., Burla

1. Lecturer in Mathematics—One post
2. Reader in Civil Engineering—One post.

II. Scales of Pay

Reader: Rs. 1200-50-1300-60-1900/-
Lecturer: Rs. 700-40-1100-50-1600/-

- III. All posts carry usual dearness allowance and C.P.F.-cum-gratuity benefits as would be determined by the University from time to time.

- IV. The age of retirement is SIXTY years.

- V. (a) **Qualifications: Essential for category 'A' and for the post of Lecturer in Mathematics in category 'B'.**

Reader

- (i) Good academic record with a Doctorate Degree or equivalent published work.
- (ii) Evidence of being engaged actively in research.
- (iii) Five years experience of teaching and/or research out of which at least three years shall be as Lecturer at the University Department/College at P.G. level.

Lecturer

- (i) A consistently good academic record with first or high second class Master's Degree in the relevant subject or equivalent foreign degree with grade B+ or 55% of marks.
- (ii) A Doctorate Degree or published work of equally high standard.

In case a suitable candidate possessing a Doctorate degree or equivalent published work is not available, a person possessing consistently good academic record (due weightage being given to M.Phil. or equivalent degree or research work of quality) may be appointed on the condition that he will have to obtain a Doctorate Degree/ produce evidence of published work of equivalent high standard within five years of his appointment failing which he will not be able to earn future increments until he fulfils the requirement.

(b) Qualifications: Essential: For Category 'B'

Reader

- (i) A first class Master's Degree/ Doctorate Degree in the appropriate field with minimum of five years experience in teaching and/or research out of which at least three years shall be in teaching in an Engineering College/University.
- (ii) Experience in conducting and guiding research.
- (iii) Candidates with outstanding teaching, research experience and Doctorate Degree or published work of equal standard will be preferred.

VI. Specialisation required (Category—'A')

(a) **Reader in Statistics:** Probability theory and Stochastic Process/Numerical Analysis/Theory of games and decision functions/Statistical inference/Probabilistic number theory.

(b) **Reader in Political Science:** The candidate should be specialised in any one or two of the following branches:

International affairs/International Politics/International Law/Comparative Governments/Advance Political Theory.

Seven copies of the application form will be supplied from the University Office to each candidate in person on cash payment of Rs. 10/- (Rupees ten only). Candidates intending to receive forms by post are required to send (a) Crossed Indian Postal Order of Rs. 10/- payable to the Finance Officer, Sambalpur University, Jyoti Vihar, Burla (b) Self addressed envelope ((23×10 cm) with postage stamps worth Rs. 3.75 affixed to it with the words "APPLICATION FORM FOR TEACHING POSTS IN THE SAMBALPUR UNIVERSITY" superscribed. Money order, Cheque or Bank Draft will not be entertained.

The last date of receipt of application by the undersigned is 12.12.78.

Candidates will be required to appear before a Selection Committee appointed by the University at their own expenses. Selected candidates will be required to join the post within one month from the date of issue of appointment order.

Candidates who have already applied for the post of Reader in Statistics for P.G. Department and Reader in Civil Engineering and Lecturer in Mathematics for University College of Engineering, Burla in the proper form in response to the advertisement No. 9769/TDS Dated 6.5.78, need not apply again. Issue of this advertisement does not make it binding on the part of the University to make appointment.

All Communications should be addressed to the undersigned by designation and not by name. No interim reply to any query shall be given.

G.P. Guru
REGISTRAR

LUCKNOW UNIVERSITY

Advertisement No. 19/1978

Applications are invited for the following posts:

1. One temp. Reader under the Regional Centre for Research & Training in Municipal Administration in the Department of Public Administration in the grade of Rs 1200-50-1300-60-1900.

QUALIFICATIONS

Essential—(a) A doctorate in the subject of study concerned or a published work of a high standard in that subject; and

(b). Consistently good academic record (that is to say, the overall of all assessments throughout the academic career of a candidate) with first or high second class (that is to say, with an aggregate of more than 54% marks) Master's degree in the subject concerned or equivalent degree of a foreign University in such subject.

Where the selection Committee is of the opinion that the research work of a candidate, as evidenced either by his thesis or by his published work is of a very high standard, it may relax any of the qualifications specified in sub-clause (b) of clause 1.

2. Experience of teaching honours/post-graduate classes for not less than five years and published research work of high standard in the subject.

Preferential—Experience of teaching post-graduate classes and guiding research.

Lecturers in the grade of Rs. 700-40-1100-50-1600.

2. Two Lecturers in Sanskrit
3. Two Lecturers in Ancient Indian History & Archaeology
4. One temp. Lecturer in Psychology (likely to be made permanent)
5. One temp. Lecturer in Chemistry
6. Two temp. Lecturers in Commerce
7. One temp. Lecturer in Mathematics

QUALIFICATIONS

Essential—(a). A doctorate in the subject of study concerned or a published work of a very high standard in that subject; and

(b). Consistently good academic record (that is to say, the overall record of all assessments throughout the academic career of a candidate) with first class or high second class (that is to say, with an aggregate of more than 54% marks) Master's Degree in the subject concerned or equivalent degree of a foreign University in such subject.

Where the Selection Committee is of the opinion that the research work of a candidate, as evidenced either by his thesis or by his published work is of a very high standard, it may relax any of the qualifications specified in sub-clause (b) supra.

Preferential—Experience of teaching degree/honours/post-graduate classes for two years.

8. One Part-time Lecturer in Commerce on Rs. 350 p.m

QUALIFICATIONS

Essential—First or high second class Master's Degree in the subject concerned with a good academic record.

GENERAL

For purposes of qualifications required for the above posts, the Degree obtained in a subject taught in a Department which is subsequently constituted into separate Departments, shall be deemed to be degree in the subject concerned for the newly constituted Departments.

Benefits of Provident Fund available as admissible under the rules on confirmation for permanent posts. Period of probation for permanent posts is one year. It is not necessary to fill any/all of the advertised posts.

For the posts of Lecturers, others thing being equal, preference will be given to Scheduled Castes/Tribes candidates, who are considered fit. Such candidates, should indicate in their applications that they belong to Scheduled Castes/Tribes, attaching certificate from the District Magistrate of the District to which they belong. No other certificate for this purpose will be entertained. In case of Scheduled Caste/Scheduled Tribe candidates interviewed by the Selection Committee, if suitable candidates are not available for appointment to the posts of Lecturers, the Selection Committee may recommend appointment of suitable candidates as Research Associate in the scale of Rs. 700-1300 for a period upto three years and these persons could later compete for the posts of Lecturers as and when vacancies occur.

Applications on the prescribed form (available on request, accompanied with a self-addressed envelope of size 23 cm x 10 cm, free of cost, from the office of the Registrar) with recent testimonials, publications etc. should reach the Registrar, Lucknow University by Monday, November 24, 1978. The candidates who are in service must send their applications through proper channel. Application Forms to outstation candidates will be issued by posts upto Monday, November 17, 1978.

Those who have applied for the above posts at sl. no. 2, 3, 6 & 8 in response to our Advertisement No. 7/1977 dated March 24, 1977 need not apply afresh as their old applications will be considered. Such candidates may, however, intimate their additional qualifications and attainments during this period for their specialisation in the respective fields.

B. N. Singh
REGISTRAR

THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA

Notification No. 9

Applications are invited for the following posts in the prescribed forms which will be available upto 7th December, 1978 along with the details of qualifications and Specialization from the undersigned on pre-payment of Rs. 2/- (Rs. 00-50 for members of Scheduled

Castes/Scheduled Tribes) by Crossed Indian Postal Order payable to Registrar, M.S. University of Baroda along with a self-addressed envelope of 30 cms x 12 cms for each post.

The applicants at the time of requesting for the prescribed forms should mention very specifically the post for which the forms are required. The Scheduled Castes/Scheduled Tribes candidates will attach a certificate to this effect.

I. Faculty of Arts

Readers in : (1) Economics—Two Posts (2) Political Science (3) Gujarati (4) Hindi—Two Posts (5) Sociology.

Lecturers in : (1) Sociology—Two Posts (2) English—Two Posts (3) Economics (4) Persian (5) Pali (6) Linguistics—Two Posts (7) Research Officer (Oriental Institute).

II. Faculty of Commerce

Professor of : (1) Commerce (2) Co-operation Reader in : (1) Banking. Lecturers in : (1) Accounts (2) Commerce (3) Banking

III M.K. Amin & Science College & College of Commerce, Papra

Lecturers in : (1) Accounts (2) Commerce (3) Economics.

IV Faculty of Education and Psychology

Professors of : (1) Educational Administration (2) Psychology. Readers in (1) Education—Three Posts—(One in Education, one in Mathematics and one in Sociology of Education), (2) Clinical Psychology or Industrial Psychology.

V. Faculty of Science

Professors of : (1) Statistics (Operation on Research Econometrics (2) Geography.

Readers in: (1) Botany—Two Posts (2) Chemistry (Solid State Chemistry) (3) Geography (4) Geology (5) Statistics—Two posts (One is for Statistical Service Unit) (6) Zoology. Lecturers in : (1) Chemistry (Three Posts) (2) Geology (3) Physics—Two Posts (4) Zoology—Two Posts.

VI. Faculty of Law

Reader in (1) Law—Two Posts, Lecturer in (1) Law

VII Faculty of Home Science

Professor of (1) Foods and Nutrition. Lecturers in : (1) Clothing and Textiles—Two posts (2) Biology (3) Chemistry (4) Home Science Education and Extension—Two Posts (5) Child Development—Three Posts.

VIII Faculty of Fine Arts

Readers in (1) Art History (2) Museology.

IX Faculty of Social Work

Reader in (1) Social Work. Lecturer in (1) Social Work

Scales

Professor : Rs. 1500-60-1800-100-2000-125/2-2500

Reader : Rs. 1200-50-1300-60-1600-Assessment-60-1900

Lecturer : Rs. 700-40-1100-50-1300-Assessment-50-1600

The posts carry usual allowances in accordance with the rules of the University.

Even though no individual post is declared as reserved, the reservation of the posts, for different categories is as under

Reservation University Post.	SC	ST	Backward Class (as per Baxi Panch)
Professors	1	1	—
Readers	2	3	1
Lecturers	2	5	2

The application form accompanied by crossed Indian postal order payable to the Registrar, M.S. University of Baroda, worth Rs. 10 for the posts of Professors and Readers (SC/ST candidate Rs. 2-50.) and for Lecturer worth (Rs. 8-00) (SC/ST candidate Rs. 2-00) should reach on or before 14th December, 1978. The candidates if called for interview will have to come at their own expense.

K.A. Amin
REGISTRAR

GUJARAT AGRICULTURAL UNIVERSITY

Sardar Krishnanagar-385 506

Advt. No 3/78

The applications from the candidates fulfilling the requirements for the following posts are invited, so as to reach the Registrar, Gujarat Agricultural University, Sardar Krishnanagar 385 506 Dist. Banaskantha on or before 30-11-78.

Post and Scale.

Professors. (Rs 1500-2500)

Disciplines: Process Engineering, Plant Breeding and Genetics, Biochemistry, Nemetology.

Associate Professors. (Rs 1200-1900)

Disciplines: Farm Engineering, Rural Engineering, Soil and Water Engineering, Process Engineering, Plant Breeding, Nemetology, Biochemistry, Horticulture.

The candidates desiring to apply for these posts should possess:

1. A good Bachelor's degree in the concerned faculty.
2. Ph. D. or equivalent degree in the concerned field.
3. At least Higher Second Class Master's degree in the concerned field with good academic record.
4. At least 10 years experience in teaching/research/extension education for Professor's post and at least 7 years experience in teaching/research/extension education for Associate Professor's post.

Applications should be made in the prescribed form which can be had from the Registrar, Gujarat Agricultural University, Sardar Krishnanagar on cash payment of Rs 2/- or by sending crossed I.P.O of equal amount issued in favour of "Comptroller, Gujarat Agricultural University" along with the self addressed envelope affixed with 0.50 paise postage stamps.

M. P. Vaishnav
REGISTRAR

OSMANIA UNIVERSITY

Hyderabad-500 007 (A.P.)

Advertisement No. 14/1978

Applications, in the prescribed form together with the registration fee of Rs. 5/- are invited for the following posts in the University service, so as to reach the undersigned on or before 20.11.1978.

1. Astronomer—Rs. 1500-2500
2. Professor of Urdu—Rs. 1500-2500
3. Reader in Persian—Rs. 1200-1900
4. Reader in Bio-chemistry—Rs. 1200-1900
5. Reader in Bio-physics—Rs. 1200-1900
6. Senior Research Associate—Rs. 1200-1900
7. Instrument Mechanic—Rs. 400-950 (Unrevised)
8. Public Relations Officer—Rs. 700-1200

QUALIFICATIONS

Post No. 1

- (i) At least Second Class Master's degree with 55% marks in aggregate in Astronomy or Physics or Mathematics from an Indian University or an examination recognised as equivalent thereto from any other recognised University.
- (ii) A research degree of a Doctorate standard in Astronomy OR a Doctorate degree in Physics or Mathematics with a thesis on a problem in any branch of Astronomy or Astrophysics.
- (iii) At least five years' research experience subsequent to obtaining the doctorate degree.
- (iv) Should have to his/her credit some original outstanding work in any branch of Astronomy or Astrophysics as evidence by publications in the field of specialisation.

DESIRABLE

- (i) Experience in organising a group of research workers and supervising their work in the field of specialisation.
- (ii) Experience in the operation of Astronomical Telescopes and Auxiliary equipment and also considerable experience in the design, fabrication and testing of new optical and/or electronic equipment for use with such telescopes.

Post No. 2

- (i) At least a Second Class Master's Degree in the subject concerned with 55% marks (B+) in aggregate from an Indian University or an examination recognised as equivalent thereto from any other recognised University.
- (ii) A research degree of a Doctorate standard and/or published work of high standard.
- (iii) At least ten (10) years teaching experience of which at least five (5) years' shall be teaching

Post-graduate Classes and some experience of guiding research.

Specialisation: Iqbal Studies

Post Nos. 3, 4 & 5

- (i) At least a Second Class Master's Degree in the subject concerned with 55% marks (B+) in aggregate from an Indian University or an examination recognised as equivalent thereto from any other recognised University.
- (ii) A research Degree of a doctorate standard or published work of equivalent standard.
- (iii) At least five (5) years' teaching experience at the University or in a recognised College with Publications of high standard.

Specialisation for the post No. 4

Plant Bio-chemistry

Post No. 6

- (i) At least a Second Class M.A. in Economics with 55% (B+) marks in aggregate from any recognised University or its equivalent qualification from a foreign University.
- (ii) A research degree of a doctorate standard or published work of an equivalent standard in the fields of Economic Development/Industrial Economics/Planning/Public Finance.
- (iii) At least five year's research experience at a University or recognised research institute with publications.

Desirable

Experience of guiding research projects or research students.

Post No. 7

- (i) B.Sc. in Physics and a Diploma in Electronics.
OR
M.Sc. with Electronics as a special subject.
- (ii) Candidates with experience need apply. For specially qualified candidates, higher start can be considered.

Post No. 8

- (i) Bachelor's Degree with degree/diploma in journalism or Public Relations.
- (ii) Four year's experience in Journalistic or Public Relations career.

FUNCTIONS DESIRABLE

- (i) Experience in Employee Or Youth or Labour Relations.
- (ii) Ability to write Press releases, articles, speeches and radio scripts.
- (iii) Ability to edit house magazine and to bring out other publications.
- (iv) Ability to organise Press Conferences and to maintain liaison with press and other media of communication.

AGE

Post Nos 1 & 2—Not above (50) years

Post Nos. 3 to 6—Not above (40) years

Post Nos. 7 & 8—Not above (35) years.

Note

- (i) Age limit does not apply to the employees of this University.

- (ii) Relaxation in age to the extent of five years may be granted to candidates belonging to S.Cs., S.Ts. and B.Cs., for the post of Instrument Mechanic and Public Relations Officer.
- (iii) The teachers of affiliated Colleges who have put in at least five years service in any of the college affiliated to the Osmania University may be given relaxation in age to the extent of five years.
- (iv) Age relaxation can be considered in deserving cases.

GENERAL NOTE

1. A latest passport size photograph should be attached to the application form.
2. For the teaching posts in the Science Faculty, the research seminar experience in research institutions recognised by the University shall be considered as equivalent to teaching experience.
3. 14%, 4% and 25% reservations are made for Scheduled Castes, Scheduled Tribes and Backward Classes respectively in case of posts No. 7 & 8.
4. The University reserves the right to reject any application without assigning any reason.
5. Candidates must send three sets of their publications, if any, along with their application forms.
6. Filling up any of the vacancies depends on the exigencies of teaching work.
7. In case the Selection Committee finds that the candidates who have appeared before them for a particular post are not suitable for the post, the Committee may then consider them for a lower cadre post.
8. Candidates already in service must submit their applications through proper channel. They may, however, send an advance copy, but if called for interview, they must produce a No Objection Certificate from their employers.
9. Candidates who have applied from abroad will be considered on paper and if selected shall be interviewed by the Vice-Chancellor before joining duty.
10. Candidates will have to present themselves for an interview at their own expenses.
11. Incomplete applications are liable to be rejected.

B. Ramachandra Reddy
REGISTRAR

BANARAS HINDU UNIVERSITY

Notification

The last date for receipt of applications for the posts advertised vide our Advertisement No. 4/1978-79 has been extended upto November 20, 1978.

REGISTRAR

Mr
20/11/78



Returning
on our fast,
non-stop flights
can be a delightful treat. You get
more time in London, or arrive
home earlier. Twice a week from
London to Delhi, and then to
Bombay. And twice a week from
London direct to Bombay.
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you'll wish it would go on a little longer.

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non-stop London-Return.
Four times a week.**

AL3530A)

University News

A FORTNIGHTLY CHRONICLE OF HIGHER EDUCATION & RESEARCH DECEMBER 1, 1978

14-10



President, Shri Neelam Sanjiva Reddy, inaugurated the Himachal Pradesh Krishi Vishwavidyalaya at Palampur. Shri Aminuddin Ahmad Khan, State Governor and Chancellor of the University, Dr. H.R. Kalia, Vice-Chancellor and Dr. M.S. Swaminathan, Director-General, ICAR, are also seen, among others, with the President.

SRI VENKATESWARA UNIVERSITY

Tirupati

Applications in the prescribed forms are invited for the following posts on or before **12-12-1978**

I. UNIVERSITY SERVICES & INSTRUMENTATION CENTRE

1. Reader/Senior Scientific Officer
Rs. 1200-50-1300-60-1900/ Rs. 1100-50-1600.

Qualifications : Essential : (i) At least second class Post-Graduate Degree in Engineering or Science with 5 years experience in R & D of instruments or in operation, repair and maintenance of modern instruments. (ii) Proven ability to organise the newly started University Services and Instrumentation Centre.

Desirable : Working knowledge and experience in organising design and development of educational research experience. (Depending on the qualifications and experience, the grade will be fixed).
Note : Candidates who have already applied for the post of Scientific Officer/Instrumentation Engineer in response to the advertisement dt. 22-9-1978 need not apply again for this post.

II. REGIONAL RESOURCE CENTRE : ADULT EDUCATION DEPARTMENT

2. Co-ordinator (Training)

Rs. 700-40-900-EB-40-1100-50-1300.

Qualifications : Essential : (i) M.A. (Adult Education, Education, Social Work, Sociology, Economics, Population Education, Psychology, Rural Development), M.Ed./M.B.A./M.B.M./M.Sc. (Extension Education) - I or II class (ii) Proficiency in Telugu and English.

Desirable : (i) Experience in Training Personnel in fields like Adult Education/Non-formal Education, Rural Development, Community Development, Health, Nutrition, Family Welfare, Mass Communication, Tribal Development, Social Welfare (ii) Academic qualifications and experience in the field of Adult Education.

3. Co-ordinator (Materials)

Rs. 700-40-900-EB-40-1100-50-1300.

Qualifications : Essential: (i) M.A. in Telugu or Linguistics—I or II class—with proficiency in English and Telugu. **Desirable :** (i) Experience in preparation of teaching/learning materials for literacy/Adult Education/Extension Education Programmes (ii) Publications—books, pamphlets, popular articles in Telugu (iii) Academic qualification in Adult Education.

4. Co-ordinator (Research & Publications) : Rs 700-40-900-EB-40-1100-50-1300.

Qualifications : Essential : (i) M.A. (Adult Education, Social Work, Sociology, Economics, Population Education, Psychology, Rural Development),

M.Ed./M.B.A./M.B.M./M.Sc. (Extension Education)—I or II Class (ii) Proficiency in Telugu and English.

Desirable : (i) Research Experience (ii) Publications—Research & Popular (iii) Degree or Diploma in Journalism (iv) Experience as Editor/Sub Editor of Telugu Journals (v) Academic qualifications and experience in Adult Education.

5. Artist : Rs. 600/- P.M. Fixed.

Qualifications : Essential : Diploma in Fine Arts (Commercial Artist).

Desirable : Knowledge in Photography.

6. Programme Assistant : Rs. 600/- P.M. Fixed.

Qualifications : Essential : M.A./M.Sc./M.Com.

Desirable : (i) Clerical Experience (ii) Lower/Higher in Typewriting (English) (iii) Experience in the field of Adult Education.

N.B. The qualifications will be relaxed in the case of candidates otherwise suitable,

7. Research Assistant Economics Dept: Rs. 200/- P.M. Fixed.

Qualifications : Essential : A first or High Second Class M.A. Degree in Economics.

Desirable : Publication of articles in Standard Journals.

III. S. V. UNIVERSITY SCHOOL :

8. Hindi Pandit (Reserved For Scheduled Caste): Rs. 290-11-400-15-520.

Qualifications : Essential : (i) A Pass in S.S.L.C. or its equivalent. (ii) A Visharad Diploma of Dakshina Bharat Hindi Prabhara Sabha or Basha Praveena title in Hindi of the Andhra University or its equivalent. (iii) Pandit's Training Certificate in Hindi. **Age:** Not above 41 years as on 1-7-1978.

IV. S.V.U. LIBRARY ETC.

9. Library Assistant (Reserved For Scheduled Tribe) Rs. 320-14-460-15-580.

Qualifications : Graduate with a Degree or Diploma in Library Science from a Recognised University. **Age :** Not above 41 years as on 1-7-1978.

Posts with S.Nos. 2 to 6 are temporary. S.T./S.C./B.C. candidates should produce the Caste Certificate along with the application.

Prescribed application forms and details of the advertisement can be had from the Registrar, S.V. University, Tirupati—517 502 by sending a crossed Indian Postal Order for Rs. 2/- drawn in favour of the Finance Officer, S.V. University payable at the S.V.U. Campus, Post Office, Tirupati or by State Bank of India/Andhra Bank Challan or Demand Draft for Rs.2/-. The Syndicate reserves the right to fill in or not to fill in any or all of the above posts without assigning the reasons therefor and the right to consider and appoint, if found fit by the Selection Committee, those who have not applied.

REGISTRAR

OSMANIA UNIVERSITY Hyderabad-500 007 (AP)

Advertisement No. 15/1978

Applications, in the prescribed form together with the registration fee of Rs. 5/-, are invited for the following posts in the University Service, so as to reach the undersigned on or before **12-12-1978**.

1. Reader in Library Science . . .
Rs. 1200-1900.

2. Lecturer in Library Science. . .
Rs. 700-1600

Qualifications: Posts 1 & 2

At least a Second Class M.Lib. Science Degree with 55% (B+) marks in aggregate with at least a Second Class B.A./B.Sc./B.Com. degree of an Indian University or an examination recognised as equivalent thereto from a recognised University. **OR**

At least a Second Class Master's degree with 55% (B+) marks in aggregate with a Second Class B.Lib. Sc. degree or one year Post-graduate Diploma in Library Science from an Indian University or an examination recognised as equivalent thereto from a recognised University.

Other conditions for post No. 1

i) At least five years experience in a responsible capacity in any recognised Library or University of which at least two years shall be teaching experience in Library Science at a University or in an Affiliated College.

ii) Candidates with Ph.D. in Library Science or Published work of an equivalent standard in Library Science will be given preference.

For post No. 2

Candidates with experience in a responsible capacity in a recognised library or experience in teaching the subject of Library Science at a University or an affiliated college will be given preference.

Age

Reader . . Not above (40) years

Lecturer . . Not above (35) years

Note

14%, 4% and 25% reservations are made for Scheduled Castes, Scheduled Tribes and Backward Classes respectively only in case of Lecturer.

Application forms can be had from the Director, Department of Publications and University Press, Osmania University, Hyderabad-500 007, Andhra Pradesh (India) on payment of Rs. 4-50 in person or by money order or by a postal order UNCROSSED made payable to the Director and by sending a self-addressed envelope (11½ x 26½ cms) duly stamped for ordinary or registered post.

Full particulars can be obtained on requisition from the Director, Osmania University Press, free of cost, by sending a self-addressed stamped envelope.

**B. Ramachandra Reddy
REGISTRAR**

UNIVERSITY NEWS

Vol. XVI

DECEMBER 1

No. 23

1978

*A Fortnightly Chronicle
of Higher Education*

Price
80 Paise

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*Opinions expressed in the articles
and reviews are individual and do
not necessarily reflect the policies
of the Association*

Hony. Editor : ANJNI KUMAR

College Science Improvement Project

V. Natarajan*

A big leap forward in the direction of improvement of science teaching, the UGC's College Science Improvement Project (COSIP) has already yielded some impressive and concrete results. True, there were efforts earlier, particularly the one initiated in 1965 under the joint auspices of the USAID and the UGC, but COSIP, with experience in the background, was much more comprehensive, broad-based and methodical.

A part of the overall project was the University Leadership Project, aiming at the selection of some university departments in each of the science subjects to provide leadership to all affiliated colleges of the university concerned, in the improvement of teaching and instruction. The COSIP can now boast of as many as 37 ULP centres all over the country—physics (13), chemistry (11), mathematics (5), biological sciences (7), geology (1). Supported financially by the UGC, these ULP centres have successfully accomplished their specific programmes with the active co-operation of all affiliated colleges.

The COSIP was also extended to some select colleges all over the country, providing them with adequate financial grants, to improve their quality of instruction, thereby paving the way for the attainment of an 'autonomous' status. As many as 149 colleges have already taken full advantage of the scheme and made an honest effort to bring about the desired improvement in science education.

"The most important thrust in this project is towards the improvement of undergraduate science education and giving it the same if not a better status as the post-graduate education or research".

Ever since the programme was initiated in 1971, the ULP centres and COSIP colleges have produced good quality resource materials in teaching/learning/evaluation in science subjects at the first degree level, text books with the active involvement of a large number of teachers and projected/non-projected aids like films, film-strips, video and audio cassettes, transparencies, charts and models. Some have taken steps to produce banks of item questions.

The efforts have, however, been isolated. True, the regional conferences, held at Mysore, Ahmedabad, Allahabad and Shillong, did a good deal in bringing about cohesion and dissemination of information. But much more can perhaps be done by bringing out a publication, listing these resources, so that the colleges/centres desirous of making use of them should be able to do so.

Central agency

Moreover, to make the desired impact of such a pioneering work and effort, there is need for setting up a central agency preferably within the (UGC) to co-ordinate and mass produce these resources, thereby enabling colleges all over the country to make use of them.

It may also be impressed upon each ULP centre to display not only their own materials but also those produced by the other centres. Periodical exhibitions of the materials and resources may be arranged. The duplication of efforts may be avoided by a regular exchange of notes between different centres.

Regional conferences have done a commendable job in providing an opportunity for the exchange of experiences, evaluation of the progress made and evolving guidelines for the future. What may further be proposed is to look at the improvement of science education in all

*Project Officer (Exam), AIU.

(Continued on page 1288)

Crisis of Communication

Moti Lal Sharma*

Education deals with human being as a whole; physical, social, psychological, political, economic, moral, ethical, spiritual, aesthetic; not just a learning machine, and even less as a receptacle for knowledge, to be filled to a graduated level during an age period enhancing late childhood, youth and early maturity. Education aims at preparing human being to express his full personality as a conscious, creative, contributing and free being in his work, his family life, his political decisions, and his relation to his total environment. By free being I mean, a human being who can use his potential when situations demand to influence the choices and decisions which determine his socio-economic and political environment. Quality of human potential a nation has, defines its degree of development as well as systemic potential to develop in the future. Development and nurturing of human potential is essentially based on educational potential of nation (system). When I say "educational potential" it does not necessarily have to be limited to education system(s) such as formal, informal, non-formal, but by "educational potential" I mean systemic educational potential in terms of level of education of each to "whole human being" participating in the evolution of the total system which enables a human being to operate and encounter effectively to produce socially useful results in a given situation. Education systems developed so far have not taken into account "whole human being" and the result is segmentation of education, difficulties in communication between persons from different fields, cultures, and above all difficulty in communication between the educated and the illiterate (not necessarily uneducated). Thus there is a crisis of communication between man and man.

Hence the problem of immediate concern to educationists and researchers is to think of strategies which can help in minimizing (if possible, removing) the communication gap between the educated and the illiterate. One solution could be to make all illiterates literate, which cannot be done over night because of enormous number. Besides this, illiteracy is a growing problem in today's world. It has been estimated that there are 110 millions more illiterates in the world today than there were in 1951. The majority of that increase has occurred in the developing world. Let us take the example of India. According to census figures of 1971, there were about 41 million children in the age group 6-14 years who were not going to schools. In addition, there were 211 millions illiterates above the age of 15 years out of whom 52.6 millions were in the age group 15-22 years. Further, if we look into the growth of the problem by taking one simple example of children

in the age group 11-14 years only, we find that the number of children not receiving schooling which was 21.85 millions in 1951, increased to 33.88 millions in 1971 and this number will not decrease appreciably in the near future.

Thus, if we assume that literacy is a necessary precondition for development, learning and education, I feel we are avoiding the responsibility towards our fellow illiterates. I intend to agree with Ward and Herzog (1974) who state that "unless lesser developed countries can break out of the 'literacy first' perception of education, they are dooming huge percentages and often increasing numbers, of their citizens to continued ignorance, powerlessness and poverty." I do not deny that literacy is a useful skill for people in the process of development. But I do deny that reading is the only way to learn the knowledge and skills necessary for development. People who cannot read also can learn, develop and achieve maturity and leadership capability if knowledge is made available to them through modes and channels which do not require prior literacy skills among the learners. So the problem is more of "effective communication" rather than lack of reading-writing skills. Effective communication means helping people learn relevant items of knowledge that they will be able to apply that knowledge to their personal needs in their own life-environment. Hence the major task for less developed countries having large numbers of illiterates is to develop instructional experiences which will effectively communicate knowledge for development and education of people who cannot read and write. Thus future research should be directed to developing models for education of illiterates to minimize communication gap between man and man.

As far as the problem of literacy is concerned, it demands attention of total system—the nation. Sub-systems like state departments, departments of primary and secondary education are not competent enough to deal with this problem. The only competent system, which can possibly face this problem is political system. I would suggest that political system of the nation must run its own network of community education centres to equip all the members of community, who have crossed compulsory schooling age, with minimum literacy skills so as to enable them to understand the philosophy and problems of the nation and also enable them to participate effectively and contribute to governance process of the nation. It is a moral responsibility of political leadership of the nation to educate and involve the political membership they are leading in the governance processes. Under such a situation all local political leaders with organized local non-formal education courses and other subordinate sys-

* Department of Education, South Gujarat University.

tems will be providing supporting services to enable such programmes to be educationally successful. Under such circumstances instead of giving non-formal education in the hands of bureaucracy the whole movement may be run and controlled by the political system of the country. It will, besides equipping people with literacy skills, also help in stabilizing political philosophy of the nation which is essential for survival of any nation. In future, education programmes will have an important place in the manifesto of the political system governing a nation, otherwise the future world will be facing political crisis of a great magnitude.

Furthermore people in democracy make the choice about the future they desire. And to make right choice people want to learn and to understand how to cope politically, scientifically and imaginatively with what is important in their own lives because they themselves are responsible for their own survival and the survival of the system. Mathetaide's role is to ensure that all people are fully enabled to take their decisions from an early age.

Now what is the criteria of being educated? By educated man I do not mean a literate person, but by educated I mean an individual who is well informed of the problems of the system he is part of and ready to act as per demands of this role, both as an individual and as a member of total system. Man of today is living in a time when he feels an extraordinary importance in terms of coping with problems on a national level and an extraordinary degree of threat when he speaks of coping with problems on an international level. This situation warrants a high degree of awareness and consciousness. Education should equip human beings with disciplined thinking and make them conscious of the global problems, viz. (i) value of democracy; (ii) man's relationship to man and man's relationship to himself; (iii) the population situation; (iv) relationship between different nation-states having different political philosophies, and (v) between rich and poor nation-states; and so on. Solution of such problems will depend on leadership as well as active participation by the members of the respective system. Ignorance and non-participation are critical issues from the point of view of democracy. And it is more important for the future world heading towards world democracy.

Participation in the governance process on the part of the people of almost all the nations in the world is very very low to-day. Report by Harris and the Senate Sub-Committee titled "Confidence and Concern" (1973) says that first, people don't know and they know they don't know, and when asked they say they don't know, what the important elements of the immediate governmental problems are. Secondly, they don't do anything such at all about governmental problems and governance processes. Voting is the largest form of participation which ranges between 30 per cent to 65 per cent. Thirdly, Committee came to the conclusion that people want very much to participate more fully in the process of governance. This is an example from a developed nation—the USA. Now we can imagine about the

situation of developing countries in this respect. Participation depends on the ability of an individual to express himself utilising his creative potential. Secondly, it depends on how far one is conscious of the fact that he is one of the "trustees of evolution of nance of the system he is part of.

Another important problem which demands awareness of the population problem. Now it is an established fact that we are living at a time when the population situation has reached some kind of critical level, and at which the prospects for a levelling of population in the next generation or two are very slim. And, empirically speaking, the results of population control programmes have been very poor. Again, this is a problem of education not of literacy. Literacy is not necessarily essential pre-condition for population education to compare with original programmes.

These are a few examples of many global problems which man of tomorrow will be facing. Now the problem of education is the problem of preparing man to cope with these problems. And this situation is very difficult for people who are in some sense or another engaged in education to know what to do, what to advise, how to teach, and what to teach; "Survival of the wisest" could be the slogan for the man of tomorrow. Heightening of consciousness for the more humane world and increasing awareness of the strains predominating in the environment all over the world is the problem which warrants attention at priority level only "social consciousness and feeling of concern" on the part of the individuals may help in lessening the intensity of these problems considerably. Hence, first of all there is a need of rediscovery of purpose of education and its alternatives to serve more adequately a world in the process of transition, a world threatened by resource depletion, population increases and hunger, the atomic threat, etc., etc.

There is a need for change in the total process of education of human beings also. As bureaucracies, the school systems educated for bureaucracy but bureaucratic school cannot serve the demands of the inhabitants of the future world. At the same time it would be a worst mistake to assume that education without the establishment of new processes and without a new institutional structure would be able to accomplish a significant social change. There is also a need of change in community structures. New community structures are wanted in which the representatives of the educational world and the employment world will work with the representatives of the community at large. There is a great need for interrealting the educational and the citizenship experiences which further indicates that instead of just developing "hands-on" educational experience with work, we also develop a "hands-on" educational experience with governance. This situation does not support the idea of deschooling suggested by Illich and others but it suggests change in nature of education and role of school, and demands for collaboration between different educational agencies of the community providing varied educational experiences to individuals. It is

not a dream to suggest, therefore, that along with school, the places like offices, factories, shopping centres, restaurants, farms, community meeting halls, art galleries, museums as well as in extended library cum-community, and resource centres will all be participating as education centres. Thus almost all organs of future community will share the responsibility of educating its inhabitants. Each one of them would work as resource centre of education.

Hence, there is a great need for educators to reassess themselves in the community and prevent alienation from it. In my view, once the whole community becomes the school it will be impossible for children to "drop out of learning" in the same way as they do not become unmotivated by their own pursuits interlaced with going shopping or visiting their parents at work during school holidays today. In such a situation every human being will take its birth in school (the community), lead its life in school and die in the lap of school. The "drop-in school" will be open alongside the restaurant, work-place, all year around. It will have rooms in every shopping centre, in complex of farms and in a workshop or a place where students of any age able to sit alongside skilled craftsman who have agreed to provide learning experiences. The future community will be multi-generational education community and with the advancement of non-formal life-long education we may see a 7-year old and a 70-year-old taking the same course-attending the same groups. Furthermore, it is also important to realise that there are forces of conservation; human nature is not going to disappear, institutions are going to stay with us, and even when we are in a culture of post-institutional anarchic man, institutional men will still be with us. Therefore, obviously school as an institution will also not disappear. While we have factories we will still have farms, and so is the case with formal and non-formal systems of education. Hence, the demand is optimization of utilization of educational resources of community and interface between the educational world and the community as a whole.

New developments in the field of educational technology show that there is great need of optimum utilization of technological potential not only to have a combination of independent, small groups and mass instruction, but individualised learning programmes. One can safely assume that community groups of tomorrow will be educating themselves using portable TV cameras and home-video-replay systems will have become as common place as TV has become in our lifetime. This will enable community groups to play instructional video-cassettes for literacy skills, as well as other educational programmes. Cassette learning programmes will be on loan from public libraries. Other technologies like cable TV, computer, radio, and small media like cassette players, slide projectors, will be widely used in these groups. Social workers, local political leaders and educated fellow citizens will work as group leaders helping their fellow citizens to educate themselves.

For example, modern medicine has extended the

period of productivity well into the 70's. Thus, there becomes available to a community an enormous talent part of retired people which has got to be utilized. Furthermore, it demands that political system of nation must participate actively in the education of members of nation. They must have well defined education-programme, for citizens of nation. Secondly, those responsible for leadership in education, politics and governance must breakdown the mutual suspicion and distance which still persists between them. They must now get together more often. Educationists must learn what political system is wanted and political leaders must sell themselves to students. It demands expansion of curriculum to political education. Thus, leaders in educational world and leaders leading nation may work together to contribute to the philosophy of the nation. The teacher of tomorrow shall have to work in political reality as ancient Indian gurus used to do. He shall be preparing youth for politics the noblest career. Secondly, I can see the prospects of change coming only through the educational rather than through the political processes. At least in the immediate present, it is not going to be possible to change the habits of political leadership enough. Hence, there is urgent necessity of changing the habits or the capacities of the attitudes of the political membership and of those responsible for political leadership in future. At this point again it becomes largely a matter of what the educators can do. Both these situations make it obvious that in the interest of the future of the world, teachers and political leaders must come closer and work together to educate the inhabitants of the future world.

Furthermore to-day's world is confronting with the problem of man's relationship to man and man's relationship to himself, so the urgent need is not of dismantling of schools but is for change in curriculum, as I have already pointed out earlier. The new educational curriculum must express a new image of nature, self and society. Burrell (1971) has rightly suggested that "vital issues about life and society, politics, education, crime, religion" should be in the curriculum. There is pressure to put emotion, social relations, relevance and feeling into the more arid areas of the school curriculum. Spiritual education will be an essential part of the world citizen of the future. There is world-wide move towards 'learning' rather than 'teaching' reported by UNESCO, American researchers and futurologists of education, who have sampled significant opinion. Thus, it calls for an urgent international programme of renewal of educational system across the nation-states in the world to see some hope for the world's survival and demands exchange of students, teachers and teacher educators in large numbers between countries.

Before I close my discussion I would like to point out that the universities and special national and state institutes at the moment are acting as elite institutions and functioning mainly in cosmopolitan cities or big towns and at a distance from common man. The new situation demands that they must move out

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Social Relevance of Education

Education is manpower planning in a fundamental sense. It is the basis of all planning, all development and all progress. Without proper educational planning, all other planning would suffer grievously. Education is, therefore, the most significant factor in achieving rapid economic development technological progress and in creating a social order founded on values of freedom, social justice and equal opportunity.

Programmes of education lie at the base of efforts to forge the bonds of common citizenship, to harness the energies of the people, and to develop the nature and human resources of every part of the country. It implies that any educational system must measure its vitality by how well it responds to the educational needs for the individual and the community.

The objective of an educational system is to create an intellectual awareness. In the economic and social growth of the country. Educational institutions are centres where the community can seek guidance. Teachers and students can find training ground to raise relevant questions and find answers to the national consciousness and development.

The educational process should extend to the socio-economic development of the community. A community-oriented education will stimulate the evolution of processes of teaching whether in social sciences, in physical sciences or in business administration. Continuing education courses, in service training, the practice of drawing upon the experience of people from different walks of life, etc., should form an integral part of the regular educational process.

Physics, chemistry and biology can and should deal much more with areas such as utilisation of the country's own raw products, thinking up devices for tapping wind energy, increasing food productivity in ponds, lakes and rivers, ensuring a safe and abundant waters supply and so on. Schemes of relevant science and technology could achieve more if practical and action-oriented research are strongly encouraged in colleges. If the efforts of laboratories are effectively multiplied on a smaller scale in the institutions through a variety of well-planned 'micro-initiatives', the gains for the country would be enormous. This can be equally applicable to the study of economics, commerce, sociology, medicine, engineering, etc.

Certain aspects of curriculum development need a great deal of consideration. First, the general and the liberal courses of study should be integrated with work oriented courses so that students should involve themselves in community services and off campus activities. It is time that we make education more useful to industry and agriculture. What is

required is the interweaving of general education with employment motivation.

While general education encourages understanding, vocational education helps to prepare an individual to work more effectively. Similarly, general education helps to acquire special skills. The interweaving will lead to a great deal of social stability.

Disturbing gap

The disturbing gap between professional and general education needs to be bridged. General education and special skills should be developed, in response to specific and urgent needs of both urban and rural areas. Special attention has to be paid to underprivileged people whose desire to enter the mainstream of country's economic and social life has not yet been achieved.

The whole philosophy of education should emphasise the training of independent and self-contained individuals who can face the problems of life and of the society they live in. The process of learning and doing must be effectively combined as part of the educational system. Every faculty member and educational administrator has to dedicate himself to the cause of vocational education, with a sense of the commitment to the nation and for national development.

It is necessary to link education with real life and productivity through introducing work experience as an integral part of education and vocationalising education after tenth class. It will be useful if vocational courses in arts, commerce, agricultural science, medicine, etc., are introduced so as to be terminal in character for gainful employment afterwards. This will divert about 50 per cent of students to these courses so as to reduce pressure on colleges.

General education should have a vocational bias and vocational education should have an element of general education. Vocationalisation of education implies that students develop skills, knowledge and attitudes so that they are able to apply them in their jobs. In fact, in vocational education, various factors both individual (his interests, abilities, values, attitudes) and environmental (socio-economic level of parents, manpower needs of the country, etc.) act and interact.

There is a tendency on the part of some people to regard vocational education as inferior to general education. And yet parents do not mind sending their children for white collar jobs. If they think of sending them to any vocational course it is always at the professional level, never at the level for which these job-oriented courses are supposed to prepare. The reason for this kind of attitude is that so far such courses have attracted children with poor academic background and lower socio-economic status. It is, therefore, highly necessary that public opinion is changed by conscious efforts. The status and need for vocational courses must be raised in order to make the present general education more meaningful for individuals and for the country.

Social change

To conclude, in a large democratic country like ours, planned social change should be the major instrument for bringing about national development. It should be applied in the village community by experimenting it at the grassroot level. However, it has not been adequately realised that rural people living under serious strains of illiteracy, social and economic handicaps as also a variety of complexes should be considered as the real motivating force behind the success or failure of our economic plans. As such, it is they for whom all kinds of programmes and plans ought to have been prepared and implemented. Unfortunately, it has not been the case in our educational system.

There can be no two opinions on the point that in the situations prevailing in developing countries, economic and social development should include areas of education, health, culture value and welfare. In fact, all aspects of life and activity, which are subject to manipulation and controlled change, need to come within the sphere of development. The ultimate goal of development is essentially the enrichment of the total quality of life and its availability at minimum levels to all sections of the population.

Real development

Indeed, development is not to be construed

merely in terms of providing for opportunities to all people. More than that, it is the actual utilisation of opportunities by the people who are the most handicapped in our community. As such, beyond the periphery of good intentions, development also involved the creation of facilities necessary for the weak—the masses, so that the human element improves.

The significance of elementary education to the masses has been duly emphasised in a Chinese sage: "If you give a man a fish, he can eat it once; if you teach him to fish, he can eat fish for his lifetime." Mass education in the context of rampant illiteracy in this country should mean telling agriculturists how best to produce in the farm, to the industrial labour how to handle the machine more effectively, to the mother how best to rear the child. Every individual also needs to be taught about his/her duties and responsibilities along with a knowledge of how useful he or she is to the society.

Mass education will therefore require creation of massive programmes for teacher training teaching material, finance, organisation and personnel for both primary and adult education. These are not the things for which we are not capable of managing within the country by our own efforts. □

[Courtesy : *The National Herald*]

College Science Improvement Project

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its aspects with a 'systems' approach and evolve a design giving (a) need, (b) goals and objectives, (c) constraints and restraints, (d) alternatives, (e) selection, (f) implementation, (g) evaluation and (h) feedback and refinement.

Integrated plan of action

Thus an integrated plan of action must emerge within the frame-work of which continuing work and further activity must be organised.

This is only by way of lending greater dynamism and cohesive direction to the whole programme, without in any way undermining the accomplishments already made and enthusiasm generated by the COSIP. In the same spirit it may be proposed that good work by teachers under the COSIP must be recognised for advancement, fellowships, travel grants to attend workshops/conferences, invitations to other centres to initiate work and placement on standing committees in the region. Students may also be urged to participate in inter-disciplinary group projects. Those showing good leadership may be encouraged to participate in COSIP seminars and given financial incentives.

Colleges may be encouraged to hold workshops

under expert guidance to scientifically plan, design, execute and evaluate projects. Their teachers should be fully trained in the theory and practice of curriculum construction and improvement, methodology of teaching, evaluation techniques and modern management techniques. They should develop their own resources for teaching/learning/testing in science subjects, also making discriminating use of resources developed by other agencies, as the Question Bank Books in science subjects brought out by the Association of Indian Universities. The value of combined work and continuous process of training in methodology of teaching/evaluation and other aspects of evaluational technology should be appreciated. This will pave the way for attainment of autonomous status for these colleges ultimately.

Above all the COSIP must take within its purview society at large. Problems faced by industry, trade, commerce and business community around may be collected, analysed and solutions offered. Adulteration of foodstuff, a borrowing problem, packaging, and other scientific problems of the industry may be thought of. Society can be an active beneficiary of the COSIP. □

(Courtesy : *The Hindu*)

Relevance of Correspondence Course

P. K. Rajan*

Reforms and innovations vis-a-vis higher education in our country are quite often superimposed on the system for considerations other than academic or social. An exception to this was the introduction of correspondence education at the university level.

Over the last fifteen years, a number of universities have come forward in quick succession to start correspondence courses. This revolutionary experiment in higher education, initiated in Europe—especially in England and France—has come to stay in our country.

Correspondence education, it is realised today, is a boon for all developing and under-developed countries of Asia and Africa, and especially so for such a large and thickly populated country as ours. Though in the early Fifties there were only three lakh students qualified to enter the university, the number has registered an incredible increase since then.

This, then, is the stupendous magnitude of the problem. Any discerning person can understand that, in the context of such an expansion in the demands of higher education as shown above, the government cannot even dream of providing facilities of formal education to all the aspirants. At the same time, to deny them opportunity will be totally contrary to the very ethics of democracy and socialism. The alternative, therefore, lies in the effective proliferation of the system of correspondence education, along with other equally effective modes, which can meet the requirements of maximum number of students with minimum investment.

The system of formal collegiate education, as we have in India today, is fraught with many drawbacks. Especially worth-mentioning are the twin curses of under-utility and wasteful expenditure.

The education budget is rapidly increasing year after year. Whereas we spent a total of Rs. 1,118 crores on education in 1971-72, the amount spent during 76-77 was Rs. 2,300 crores, only Rs. 200 crores less than our defence expenditure. It is interesting to note that the allocation for higher education, despite the accent on compulsory elementary education, has also been on the increase year after year. While, during 1971-72, the allocation for higher education in the education budget was 10%, the Fifth Plan envisages an allocation of 31.9%. This means that the amount to be spent on higher education, much of which results in wasteful expenditure owing to under-utility, will be higher than the amount envisaged for elementary education. But, if we are

sincere in shifting the accent to elementary education, the natural conclusion will be : (1) to economise the expenditure on formal collegiate education, and (2) to devise and strengthen other effective modes of imparting education, especially the system of correspondence education.

For students who cannot afford the costly education imparted through formal teaching and who, for force of circumstances, are compelled to discontinue their studies, the correspondence courses are a blessing. A large number of students are being deprived of the opportunity for university education for, immediately after their school education, financial constraints make it necessary for them to earn. And many of them who get employment of one kind or another want to pursue their studies, if possible, while earning. Correspondence education means an effective tool for materialising their dreams.

Compared to formal education, correspondence courses are cheap. The expenditure for a student of correspondence course is said to be only about 25% of that incurred by a regular college-going student.

The urban-oriented development of our society has resulted in serious imbalances which it is not easy to resolve unless we bring about radical fundamental changes in our approach to planning. In the field of education, this has resulted in the flowering of centres of higher education in urban areas only, thereby making it impossible for the common men in rural areas to reach the doors of a university.

[Courtesy : *The Hindu*]

Crisis of Communication

(Continued from page 1286)

of cities and work in villages (this is all the more essential for the developing, agricultural countries like India) to get real experience to make education relevant and meaningful to satisfy the demands of the total system. They shall have to work, in future, with village panchayats otherwise they will not be fulfilling their role and ultimately (within the next decade or two) will be meeting the same fate which the church met in the past. Involvement of common man in university affairs and that of university professors in village activities is one of the important demands of the day to achieve the goal of education of the university man of tomorrow and to fulfil the role of a university of an universal man thus helping to minimize communication gap between man and man. □

[Courtesy : *National Journal of Education*]

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Kashmir Varsity workshop recommends examination reforms

Professor Rais Ahmed, Vice-Chancellor of Kashmir University in his welcome address at the opening session of the workshop on examination reforms organised by the university department of education stressed the need for change in the present university examination system to facilitate achievement of objectives of higher education. He emphasised the importance to assess the cognitive aspect of the educational outcome and to evaluate creative imagination, originality and social awareness.

Dr. A. Edwin Harper in his paper illustrated and summarized the faulty assessment techniques. He argued that no worthwhile objective could be achieved by the present system of examination. He suggested improvements

and abilities which cannot be evaluated through a written examination at the end of term. Internal assessment should be adequately diversified. The performance of students should also serve as a feedback for improving the content of courses, methods of teaching and learning process. The purpose of internal assessment should be entirely academic to encourage student to apply themselves to their studies and to enable teachers to realise the effectiveness of the teaching-learning process.

The marks or grades obtained by students should be known to them immediately after the evaluation is completed. An appropriate machinery should be set up to look into the grievances of students who wish to get the grades

The workshop recommended that the university should give freedom to departments so that the system is introduced by the well-equipped departments.

SNDT Varsity organises adult education programmes

Prof. S.S. Varde, Maharashtra State Minister for Education while inaugurating the Adult Education programme of the SNDT Women's University in Bombay stressed the need for an intensive community development programme. The university programme envisages practical work in the field of functional literacy, improving the economic and social conditions of the deprived section of the community thereby meeting the national goals. The university organised two workshops as part of its training programme for orienting college principals and university teachers involved in the work of adult education. The thrust of discussion in the workshops was in the following directions :

- (1) Emphasis on quality through feasible targets during the first phase rather than reaching the numbers.
- (2) Identifying ways and means of motivating adult learners through their needs.
- (3) Inter-departmental involvement of teachers in different aspects of the programme.
- (4) Coordination with voluntary agencies.
- (5) Liaison with employment schemes as an incentive to women to participate in the programme.
- (6) Credit to be given to teachers and students involved in the programme.
- (7) Integration of Adult Education as a teaching component.

The university proposes to organise two other workshops on motivation and on language with reference to NAEP. The Department of Continuing and Adult Education of the University will administer the programme with the assistance from the students community, teachers and eminent social service organisations.

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in grading, internal assessment, short-answer questions, open-book examination etc.

The workshop recognised that the problem of examination reform was closely linked with the objectives of education and as such teaching, learning and evaluation should be viewed as an integrated process. It was emphasized that measures of reform may be introduced after a thorough preparation for their implementation had been made. The suggested reforms may need changes in the certain facilities like suitable student teacher ratio, better library and reading rooms facilities, arrangements for tutorials and discussion groups and appropriate changes in the management of examinations. A system of continuous and comprehensive assessment of sessional work has been recommended. The main purpose is to integrate teaching and evaluation and to test those skills

or marks reviewed. The record of internal assessment should be maintained for the purpose of statistical analysis and scrutiny. The grades or marks of sessional work and external examinations should be kept separate for they measure different abilities. The sessional work may be introduced in the postgraduate courses at the initial stages. Some checks and control may be devised to ensure comparability of grades or marks when the system is introduced in affiliated colleges. The question bank may be used either for class tests or external examination.

The workshop noted that a number of universities have already introduced the semester pattern but in many departments it is in the form of a mechanical division of courses into two halves. Efforts should be made to introduce the course units with credits to achieve the objective of the system.

PAU organises conference on sports medicine

Dr. G.S. Sundararajan while speaking at the eighth annual conference of Indian Association of Sports Medicine organised by the Punjab Agricultural University in Ludhiana explained that proper guidance on judicious spending of energy throughout the coaching schedule of the athlete could be provided by working out his calorie requirements. He said each game demanded a certain amount of calorie expenditure and advised to spread the dietary needs of trainees in four or five break-ups a day.

Mr. Shamsheer Singh in his guest lecture said that yoga could cure all ailments commonly suffered by sportsmen. He demonstrated the use of mind-breath technique for getting rid of some of the common ailments. He emphasised the need of yoga experts being given some time to prepare an athlete mentally.

Dr. Francis J. Nagle, Professor of Physiology and Physical Education at the University of Wisconsin explained 'the various processes involved in the consumption of oxygen in body during exercise. He said growth and training were two factors that explained different consumptions in different individuals.

Dr. James D. Key, National Orthopaedic Consultant, Florida, explained the various injuries commonly suffered by sportmen on their lower limbs. He also explained the functioning of different sinews of lower limbs to prevent certain injuries.

Both these specialists Dr Francis Nagle and Dr. James Key shared the view that people of the developing countries are occupied for most of the time in activities other than sports while people in advanced countries have made sports an integral part of their lives. While talking about the physiological and psychological differences in the outlook of athletes they felt that special attention was being paid in

the advanced countries to the diet of sportsmen. Genetic combinations were worked out to produce world champions. They thought that sports medicine had assumed tremendous importance during the recent years. Systematic training, proper diet, selection of game or sport for an individual were the subjects in which sports medicine experts could guide the sportsmen. The majority of the physical education teachers and coaches had not realised the importance of that medicine so far. They were of the view that biological base for physical education teachers was essential.

IIT study on engineering education

The Indian Institute of Technology, Madras study on identification of goals, needs and aspirations in engineering education has recommended that engineering education should be brought under a single Technical Education Commission with resources for research and monitoring support to evaluate the programmes. It has further suggested that undergraduate engineering courses should relate to the stated goals and national priorities in content and design. This may be achieved by restructuring and diversifying engineering disciplines or by introduction of appropriate elective subjects. Manpower information should be made available periodically to all educational agencies responsible for planning and professional training. A national manpower information system should be established for storage, updating, retrieval and analysis of information. The study suggests the meaningful exchange of personnel between the teaching faculties and working engineers. This has been thought desirable so that there may be a continuous and realistic impact of the national needs on the faculty of

these institutions. Visiting professorships should be instituted in engineering colleges for capable personnel from industries. A national agency should be created to coordinate organisation of programmes of continuing education with part-time and full-time courses at all levels. The creation of teaching funds parallel to research funds has been suggested to enable faculty members to obtain assistance in trying out new methods.

Dr. S. Ramani, the Project Director at the Institute said the result of research study indicated the direction which engineering education should take in future and the priorities of these goals. He explained that the study had identified forty national goals in order of priorities of engineering education. Energy sources and systems received the highest rating in the study followed by food production, industrial and rural development.

Development of himalayan areas on national basis

While inaugurating the seminar on science and rural development in mountains at Kumaon University, Dr. D.D. Pant, an eminent scientist and educationist said that the development of himalayan areas was a national responsibility. The Himalayas was not only the repository of our culture, it had also a significant importance for the country and the world as a whole. He said much could be achieved if the scientific developments could be popularised in villages. Ecological and social considerations would have to be given due importance and interlinked with economic considerations in our development strategy. Dr Pant said that universities would have to become centres for finding solutions to local problems and participate actively in the rural development programmes.

The seminar was organised by the Kumaon University and co-sponsored by the Department of Science and Technology and the University Grants Commission.

President inaugurates Krishi Vishwavidyalaya at Palampur

Shri Neelam Sanjiva Reddy, President of India, inaugurated recently the Himachal Pradesh Krishi Vishwavidyalaya at Palampur.

Shri Aminuddin Ahmad Khan, State Governor and Chancellor of the University extended the warmest welcome to the esteemed President and said establishment of the Krishi Vishwavidyalaya would be instrumental in ameliorating the economic conditions of the weaker section of society and in bringing prosperity to the people of the state in particular and country as a whole. Himachal Pradesh provides a wide [and diverse agro-ecological conditions to the agricultural scientists to explore the new horizons for development of forestry, horticulture and animal husbandry. The establishment of the university would facilitate research and learning in all spheres of agriculture. The Chancellor said the concerted efforts of the farm scientists have yielded beneficial results in pulling the deficit state to the take-off stage in the matter of food production. Possibility of economically utilising the wild fruits, medicinal herbs found scattered all over the Pradesh in abundance would provide innumerable opportunities to the farm scientists. The Governor further said that the havoc played by recent floods remind us of the importance of scientific management of forests, land and water resources. The man-made problem of soil erosion is looming large in the hill state where cap soil is thin and once washed away cannot be easily replenished. The problem therefore needs immediate attention of the scientists to restore and maintain the ecological balance for our posterity. The difficult conditions in the district of Lahaul & Spiti valley also present a vast field for agriculture research. The Chancellor said the Vishwavidyalaya will find a challenging area in these fields for research and extension work to help the tribal farmer to raise his standard of living.

IARI organises seminar on agricultural technology

The national seminar on the economic problems in transfer of agricultural technology held recently at the Indian Agricultural Research Institute, New Delhi has recommended massive expansion in the farm extension network to keep pace with the development in various research fields. It has suggested to make use of the agricultural universities, research centres of the Indian Council of Agricultural Research and Krishi Vigyan Kendras for training the large cadre of farm youth. A massive programme for their training has been suggested as an essential step to quicken the pace of transfer of modern for technology to the cultivators' field.

Dr. H.K. Jain, Director of the Institute said that India's potential for agricultural production was recognised as one of the biggest in the world. The country has enormous resources of irrigation, sunshine, modern farm technology and hard working farming community. The low rate of capital formation, restricted availability of farm credit and inadequate extension acted as a constraint to the rapid transfer of technology to farmers' fields. Dr. Jain said the seminar had recommended the need for evolving a total production programme for the farmer in place of giving a crop with better yield potential. He pointed out that the progress in the use of improved seeds and fertiliser during the last fifteen years was very impressive. But there was not much improvement in plant protection and water management. He said even a single spraying on the mustard crop would considerably relieve the oilseed shortage which forced large scale imports. It had to be demonstrated to the farmers that it paid to apply pesticides to the oilseed crop.

The seminar noted that several key components of the improved production technology were not within the reach of the majority of the farmers and recommended creation of a separate set up for providing services in this field.

Selective mechanisation has been recommended to ensure timely operations.

Teachers convention plead for university autonomy

The first national convention of teachers from central universities held at Banaras Hindu University pleaded for revitalisation of university autonomy in academic and administrative spheres. The convention expressed concern over the interference in the functioning of the universities. The teachers were opposed to interference in the selection of candidates for various posts and felt the academic councils of the universities were competent to decide the strength and their qualifications. The convention resolved that the various bodies of the universities be reorganised and strengthened to increase the number of elected members.

Panel to review educational programmes

The Planning Commission has constituted a steering group to review the educational policy and programmes for the sixth plan period. The group will consider the approach for educational developments and invite experts in various fields to advise on the implementation of various policies and programmes included in the plan. The steering group will review the position after taking into account the recommendations of the previous working groups on policy planning and programmes.

CIEFL offers correspondence course

The Central Institute of English & Foreign Languages has invited applications for one year's correspondence course in the teaching of English beginning next academic session. Those who complete the course will be eligible for admission to the diploma course through correspondence. The Department of Correspondence Courses of the Institute at Hyderabad will receive the applications for admission to the course upto 30th December, 1978.

BHU plans for integrated rural development

The Banaras Hindu University proposes to establish a centre for integrated rural development to extend the benefits of its knowledge and expertise for the service of the community. Dr. Hari Narain, Vice-Chancellor of the University believes that teaching and research are not the only functions of a modern university. In an underdeveloped country like India universities cannot afford this luxury and have to be sensitive to its social environments. The Vice-Chancellor has emphasised the need for this neglected aspect of university's functions.

The proposed centre aims at developing rural technology, community health services, cottage industries, scientific, agriculture and community life in the villages. With a view to modernise the attitudes of people living in rural areas, the centre will try to inculcate secular, socialist, scientific and democratic values by vigorous adult education programmes. It plans to conduct survey and research in rural problems in order to ascertain the areas of resistance as well as their solution for the integrated development of village community. The centre plans to bring complete improvement in the villages especially the under-privileged and the people living below the poverty line. The university faculties of technology, agriculture, education, medicine, science, law and social science are restructuring their programmes with this objective.

Plea for coordination between educational institutions and industry

Mr. Pravinchandra V. Gandhi, President of the Federation of Indian Chamber of Commerce and Industry in his inaugural speech at the seminar on Industry-technical education cooperation held at Technical Teachers Training Institute in Chandigarh pleaded for a close coordination between academicians and specialists from industries. He said the coordination would give them an understanding of each others'

practical requirements. Our country with one of the largest reservoir of trained manpower in the world has built up a large infrastructure of institutions of scientific research and technical training. Unemployment of the technical trained people can be attributed to this infrastructure. He asserted that the training imparted to students should be such that they could be readily absorbed in the industry. He emphasized the need for a working relationship between technical institutions and industries.

Prof. T.K. Vaidyanathan, Principal of the institute said that the cooperation between educationists and industry would achieve the objective of effective implementation of the existing programmes.

Proposal to amend Calcutta University Statutes

Shri Sambhu Ghosh, State Minister for Higher Education said in Calcutta recently that the state government plans to introduce a bill to amend the Calcutta University Act to relieve the university of its burden of undergraduate and professional colleges. The Minister said the bill would be based on the recommendations of the Education Commission and the Ghani Committee appointed by the University Grants Commission. The Ghani Committee had suggested the establishment of a regional council for every thirty colleges in the state to look after their administration and examinations. The Minister said the entire machinery of the university at present was involved throughout the year in holding examinations of the various streams. He felt the need to re-organise the structure and statutory bodies of the university. This was necessary because they had been diverted from their main task of improving the postgraduate studies and research.

The Minister however announced that a final decision would be taken after the meeting with the representatives of the teachers, students organisations and

the Vice-Chancellors of the state universities.

Plea to link education with culture

Dr. P. C. Chunder, Union Education Minister in his keynote address at the recent session of the general conference of UNESCO held in Paris said that education policy should be closely linked with culture of the people and become a part of the socio-economic development of the country. He said education should be based on the traditional culture and remain relevant and functional. Dr Chunder announced that the concept of socially useful productive work would henceforth become an integral part of India's formal system of education. The educational system must draw upon the rich cultural heritage of the country and such values must be woven into the educational system.

PAU organises winter institute on project planning

Shri R. P. Ojha, State Finance Secretary to Punjab Govt. while inaugurating the Winter Institute on project planning, evaluation and monitoring of agricultural projects at the Punjab Agricultural University said that the preparation of projects financed by indigenous and international institutions would become substantial during the years to come to fill an important gap which had existed in the evaluation of agricultural projects. He said agricultural universities should develop expertise in project planning, evaluation and monitoring of the agricultural projects which should estimate the benefits and costs of such projects to the society. The benefits of the projects where public investments are involved should reach the weaker section of the society which is highly important to identify the target group of the beneficiaries. He observed that it was more important to do ex-ante appraisal of the projects rather than providing post-mortem analysis. The evaluation studies should provide a base for improv-

ing planning appraisal and successful implementation of similar projects in future.

The Winter Institute was organised at Ludhiana by the Department of Economics and Sociology of the university and was presided by Dr. Amrik Singh Cueema Vice-Chancellor, Punjab Agricultural University.

Roorkee Varsity plans expansion in academic programmes

Roorkee University proposes to undertake studies connected with nuclear power plants during the sixth plan period. The other development plans include the study of seismic earth dam, metal solidification, foundry science, industrial pollution abatement and setting up of a high-voltage laboratory.

The working group, set up to chalk out the broad outlines of development has suggested that the intake capacity at the undergraduate level should be increased from 300 to 450 students which had earlier been reduced due to slow employment of engineers in the country. Consolidation of the existing post-graduate programmes, intensification of research in various branches of engineering and science and increase in total intake of students from 1,200 to 1,800, has been suggested by the group. To improve the manpower requirements for specialised areas of engineering and science the group has laid stress on optimum utilisation of available resources.

To diversify the areas of specialization for the engineering degree the subjects of building science and technology, surveying, environmental engineering, water resources, power instruments technology, power apparatus and system, materials engineering and hydrology have been included as elective subjects.

The working group has suggested provision of post-graduate diploma courses in some new areas of study. These areas cover irrigation and power structures, traffic engineering, bridge engi-

neering, maintenance engineering, design and turbo-machines, industrial engineering, high voltage engineering, drive systems, quality control and reliability (inter-disciplinary), alloy steel technology, aluminium technology, foundry science and technology, process techniques and control, energy resources and petroleum processing. Improvements of facilities for developing post-graduate programmes in M. Phil. and M. Tech. courses in Physics, Chemistry and Mathematics have also been recommended. Creation of research and development facilities in spiritual science, applied mathematics, surface chemistry, materials sciences, solid state devices have been recommended.

Punjabi Varsity plans M.Sc. biochemistry courses

The Academic Council of the Punjabi University at its recent meeting recommended introduction of an independent two-year course in M.Sc biochemistry in the university campus. The Council recommended that the Patel Memorial National College in Rajpura be allowed to plan admissions for the next academic session for which the University Syndicate had given its clearance. The Council took another important decision that persons desirous of improving their score in the M.A. Education examination of the university be given one chance only to re-appear in one-third of the theory papers of Part I and II examinations within a period of two years of the passing of the examination. The Institute of Post-graduate Studies (Evening) was declared a permanent unit of the university at the meeting of the Council.

Andhra constitutes panel on university administration

The Andhra Pradesh Government has constituted a committee headed by Prof. G. Ram Reddy, Vice-Chancellor of the Osmania University to suggest changes in the pattern of university administration and establishment of a

university and college service commission. The other members on the committee include Dr. R.V.R. Chandrasekhara Rao, Head of the Department of Public Administration, Andhra University, Prof. M.V. Rama Sarma, Principal of the university college of arts and science in Sri Venkateswara University, Prof. P. A. James, Head of the Department of Public Administration of Kakatiya University, Prof. D. Dakshinamurthy, Head of the Department of Commerce of Nagarjuna University, and Prof. B.N. Garuda Char, Head of the Electrical Engineering Department of Osmania University. Mr. Shaik Mowla, Deputy Secretary in the State Education Department will be the member-secretary of the committee.

The committee has been constituted in pursuance of the recommendations of the state universities vice-chancellors' conference held in July this year. The committee is expected to submit its report within the next three months.

UNESCO to consider sports charter

A draft international charter of physical education and sports will be considered by the UNESCO general conference at their next meeting. The charter proclaims the right for every human being—"the right of access to physical education and sports which are essential for the full development of his personality". A committee on physical education and sports approved the draft which calls for sports to be ensured throughout life as part of a global, lifelong and democratized education. It asserts that cooperation and pursuit of mutual interests in the field of physical education and sports will help to promote the preservation of lasting peace and create a climate for solving international problems. The UNESCO does not aim to concern itself in the staging of sporting events but would seek ways of overcoming problems in cooperation with the international sporting organisations.

Students' convention

Dr. V.K.R.V. Rao, former Union Minister for Education and an eminent economist while inaugurating the twenty-fourth national convention of Akhil Bharatiya Vidyarthi Parishad held in Bangalore recently expressed his grave concern over indulgence of students in agitations. He reiterated that for the reconstruction and proper growth of the country, students would have to make sacrifice. Dr. Rao maintained that there was a need for integrity and a sense of dedication amongst students. He was of the opinion that members of the Parishad should discuss their problems and other affairs with the government and find out amicable solutions. He said education was not an instrument of getting jobs. No one could provide employment to all who completed their education. He said educational institutions should be centres of community and character development. Emphasising the importance of social service in rural areas. Dr. Rao said that the Parishad should also operate in urban areas as poverty and insanitation were prevailing on large scale in both the areas. He reiterated the need to open time bank for social service. He appealed to each member of the Parishad to work in the field for at least four hours a week.

Dr. V.K. Gokak, Chairman of the Jnanpeeth Award Committee in his presidential remarks said that if we keep in mind the spiritual message of the country, our problems would be solved and we could rise to any height.

Prof. Bal Apte, President of the Parishad said that the students expected honest public life from their leaders. They aspired to have a situation where there was no interference in the autonomy of educational institutions.

UGC plan for regional libraries

While inaugurating the seminar on electro-optic materials and devices at the P.S.G. College of Technology in Coimbatore, Prof. B. Ramachandra Rao, Vice-Chairman of University

Grants Commission said that the Commission proposed to establish five regional libraries to coordinate scientific and technological research in the universities and central laboratories. These libraries would help effective and quick dissemination of knowledge based on research findings.

British Council and French Government scholarships

The Union Ministry of Education & Social Welfare have invited applications for award of British Council and French Government scholarships for the year 1979-80. The British Council scholarships will be awarded for studies and research in english, fine arts, history or adult education. The French Government scholarships for higher studies and training are tenable in the field of mathematics, physics, computer science, geology, agricultural sciences, microbiology, history, economics, law and fine arts. Candidates with uniformly good academic record will be eligible for these scholarships. The Department of Education of the Ministry in Shastri Bhavan, New Delhi will entertain applications upto 8th December in case of French Government scholarships and 10th December, 1978 in case of British Council scholarships.

Plea for additional funds for girls' education

Planning Commission study of the special scheme for girls' education has recommended additional funds for these schemes as the input on girls education is not considered enough. The highest annual expenditure on these schemes was Rs. 2.13 crores during the third plan period and it declined to a considerable extent thereafter. The study has urged the centre to keep a close watch on the implementation of the scheme and guide the state governments in evolving norms for selection of areas, allocation of funds and targets. According to the study, rapid expansion of education seems to have resulted in deterioration of quality. The need has therefore been felt to re-organise the curricula, attract

better educated and trained teachers and to provide better physical amenities. It has called for reconsideration of the objectives and goals of girls education to equip them to play their role effectively in social and economic spheres.

Call for students participation in rural uplift

Professor K. Venakata Ramiah, Vice-Chancellor of Kakatiya University in his valedictory address at the NSS special camp organised by the Lal Bahadur College at Mataid advised the students to involve themselves in the national programmes organised in rural areas and understand the socio-economic conditions of the people living there. There is a need to develop villages in particular as during the last thirty years concentration has all along been in the urban areas. The Vice-Chancellor urged the villages to take follow-up action on the projects initiated by the students who had worked there with the cooperation of district level officials. This was the best opportunity for students to understand the problems confronting the rural areas. The Vice-Chancellor emphasised the need to organise such other camps in the villages.

Plea for academic honesty

Dr. Ganpati Chandra Gupta, Vice-Chancellor of Himachal Pradesh University while addressing the members of teachers' forum in Simla urged them to adopt academic honesty as a guiding principle of their profession. Dr. Gupta appealed the teachers to devote most of their time to studies and research in order to justify the status conferred upon them by the society. He said ordinarily the university teacher was required to teach for 360 hours in a year and a professor had even much less teaching load. They were expected to utilise the remaining time in studies and research so that they could guide the students and provide an academic leadership.

A list of Doctoral Theses Accepted by Indian Universities

SOCIAL SCIENCES

Anthropology

1. Ghosh Maulik, S. K. Demogenetic study of a small population. Utkal University.

Sociology

1. Agarwal, Laxmi Chandra. Socio-economic systems analysis and design in health care planning. Indian Institute of Technology, Delhi.
2. Bhowmik, Sharit Kumar. Sociological study of tea plantation labour in Eastern India: A case study in the Dooars Area of West Bengal. University of Delhi.

Political Science

1. Grover, Verinder. Second Chambers in Indian States with special reference to Punjab. University of Delhi.
2. Koshy, P. Abraham. Raja Sir T. Madhava Rao and the modernisation of Travancore administration. University of Kerala.
3. Mahander Kumar. The operation of multinational corporations in India: A form of neo-colonialism. Jawaharlal Nehru University.

Economics

1. Agarwal, Bina. Mechanization in farm operations—choices and their implications: A study based on Punjab. University of Delhi.
2. Dutta, Bhaskar. Some aspects of welfare economics. University of Delhi.
3. Dutta, Jayasri. The analysis of specification errors in econometric models. University of Delhi.
4. Kameshwaranandha. Sri Lanka: A study of the impact of the export of tea on the economy. University of Madras.
5. Kurulkar, Ratnakar Purushottam. A study of co-operative longterm finance to agriculture with special reference to the Cooperative Land Development Bank, Aurangabad. Marathwada University.

Education

1. Gopalakrishnan, K. R. A critical analysis of the new mathematics syllabus and text books used in the upper primary classes in Kerala. University of Kerala.
2. Nagar, Rama Shanker. Development of education in Manipur from 1891 to 1970. University of Gauhati.
3. Srivastava, Raj Kamal. An experimental study of a linear programme on principles of economics for first year students. Himachal Pradesh University.
4. Zachariah, Thomas. Impact of attitude and interest on achievement of secondary school pupils in social studies. University of Kerala.

Commerce

1. Khan, Mohd. Ishaq. Impact of wages and welfare measures on labour relations in organised industries of M.P. after independence. Bhopal University.
2. Syed Aziz Anwar. Enlargement of the European Economic Community and its impact on Indo-British trade. University of Delhi.

HUMANITIES

Philosophy

1. Indumathi, B. A study of Sri Aurobindo's interpretation of the Isa and the Kena Upanisads from the standpoint of Sankara. University of Madras.

Language & Literature

English

1. Bhaumik, Bibhutibhushan. The art of Sheridan's prose. University of Calcutta.

2. Chattopadhyay, Saumitra. The search for identity in contemporary British fiction, 1950-1970: Kingsley Amis, Alan Silhtoe, John Wain, John Braine and Keith Waterhouse. University of Calcutta.

3. Tripathi, Jang Bahadur. A study of the influence of Indian thought and sensibility in the poetry of T.S. Eliot. University of Gauhati.

French

1. Xavier, M.J.N.A. L'Humanisme dans les romans d'Antoine De Saint Exupery et dans ceux de Mulkrajaanand. Karnatak University.

Sanskrit

1. Gupta, Pushpa Devi. Rasa in the Jaina Sanskrit mahakavyas from 8th to 15th century A.D. University of Delhi.

Hindi

1. Anshu Bala. Bharatenduyugeen kavya mein parampara aur adhunikta. University of Delhi.
2. Gupta, Neelam. Hindi kahanikaron ke rachna sidhant. University of Delhi.
3. Jain, Savita. Swatantryottar Hindi kahani mein vyakti aur samaj. University of Delhi.
4. Rai, Luxmi. Prasadottar Hindi natakon mein charitra shrusti. University of Delhi.
5. Sharma, Mahavir Prasad. Ramcharitmanas ke samajonmukhta ka parisheelan. University of Indore.

Gujarati

1. Dave, Mahendranath Chhelshanker. Poetics in modern Gujarati literature. University of Delhi.

Oriya

1. Harichandan, Niladri Bhusan. Odia aitihasik natak, 1880-1970. Utkal University.

Tamil

1. Baskaradass, E.G. Eternal human values as revealed in Cankam poems. University of Madras.
2. Mayandi, R. Canka ilakkiyattil karpanai. University of Madras.
3. Ramachandran, V. Thiruvalluyar and humanism. University of Madras.
4. Sundaramurthy, E. Parimelalagarin tirukkural uraithiran—Ore aivu. University of Madras.
5. Vijayalakshmi, P. Akilan's novels: A study. University of Kerala.

Telugu

1. Jyothirmayee, V. Study of Vasucharitra with reference to dhvani and slesha. University of Madras.

Malayalam

1. Mahilamma, V. A description of the Malayalam dialect spoken by Muslim women at Trivandrum. University of Kerala.
2. Sumathy Kutty, P. K. A linguistic study of Ramayanam Attakkatha (Ramanaattam). University of Kerala.

Kannada

1. Murigeppa, A. Linguistic analysis of colloquial Kannada in Bidar District. Karnatak University.

History

1. De, Jatindra Nath. The history of the Krishak Praja Party of Bengal, 1929-47: A study of changes in class and intercommunity relations in the agrarian sector of Bengal. University of Delhi.
2. Kulkarni, L. R. Some aspects of the life of the people under Bahamani rule. Karnatak University.
3. Paralkar, Rameshchandra Krishnacharya. Sholapur under martial law. Marathwada University.

A list of select articles culled from periodicals received in AIU Library during November, 1978

EDUCATIONAL PHILOSOPHY

- Nuttgens, Patrick. "Learning to some purpose". *Higher Education Review* 10(3); Summer 78: 9-26.
- Reynolds, Philip A. "Universities in the 1980's: An anachronism?" *Higher Education* 6(4); Nov 77: 403-15.
- Woods, John. "Case for a liberal education: Can a democracy survive without it?" *University Affairs* (Ottawa) 19(8); Oct 78: 13.

EDUCATIONAL PSYCHOLOGY

- Pande, M. B. "Interest, aptitude and personality factors as predictors of scholastic achievement". *Indian Educational Review* 13(3); July 78: 45-7.

EDUCATIONAL SOCIOLOGY

- Chatterjee, Bishwa B. "Unrest in universities: The American scene". *Journal of Higher Education* (Delhi) 3(1); Monsoon 77: 65-72.
- Desai, Neera. "Pattern of higher education of women and role of a woman's university". *Journal of Higher Education* (Delhi) 3(1); Monsoon 77: 5-19.
- Kabra, Kamal Nayan. "Brain drain: The missing perspective". *Journal of Higher Education* (Delhi) 3(2); Autumn 77: 221-6.
- Long, Samuel. "Student types and the evaluation of the university". *Higher Education* 6(4); Nov 77: 417-36.
- Ray, Anil Baran. "Parochialism vs. cosmopolitanism in Indian higher education". *Journal of Higher Education* (Delhi) 3(1); Monsoon 77: 55-63.
- Singhal, Sushila. "Genesis of student unrest: Results of a multi method analysis". *Journal of Higher Education* (Delhi) 3(1); Monsoon 77: 27-57.
- Sloan, Douglas. "Social vision in higher education". *International Association of Universities Bulletin* 26(2); May 78: 93-5.

EDUCATIONAL PLANNING

- Datt, Ruddar. "Higher education and future educational policy". *Journal of Higher Education* (Delhi) 3(2); Autumn 77: 189-205.
- Deshpande, Kalidas. "Area based resource-cum-research centre: A role for college to play". *Journal of Higher Education* (Delhi) 3(1); Monsoon 77: 89-93.
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EDUCATIONAL ADMINISTRATION

- Earls, Gerard W. "International co-operation in higher education". *International Association of Universities Bulletin* 26(2); May 78: 98-100.
- Neave, Guy and Jenkinson, Sally. "Danger of keeping research separate". *Times Higher Education Supplement* (365); 10 Nov 78: 11.
- Ramkumar, Vasantha. "Contradictions in universities and the need for managerial skills". *Journal of Higher Education* (Delhi) 3(1); Monsoon 77: 21-6.
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CURRICULUM

- Bhattacharyya, P. K. "Development of need based curricula in postgraduate education in organic chemistry". *Journal of Higher Education* (Delhi) 3(2); Autumn 77: 181-8.
- Mehta, V. R. Mane, V. D. and Patel, R. J. "Teaching curriculum in agricultural education". *Journal of Higher Education* (Delhi) 3(2); Autumn 77: 165-71.
- Plomp, Tjeerd and Meer, Adri Van Der. "Problems in the context evaluation of courses". *Higher Education* 6(4); Nov 77: 437-52.

TEACHING & TEACHER'S TRAINING

- Krishnamurthy, V. "Can we help ourselves teach better?—A case study of series of teaching workshops at BITS,

Pilani". *Journal of Higher Education* (Delhi) 3(2); Autumn 77: 149-64.

Ray, P. K. S. "Review of researches on effectiveness of microteaching in India". *Indian Educational Review* 13(3); July 78: 71-80.

Wexler, Peter. "Anthology for new colleagues". *Higher Education Review* 10(3); Summer 78: 27-41.

EDUCATIONAL TECHNOLOGY

Chaudhary, P. N. and Agrawal K. G. "Professional obsolescence and the role of continuing education". *Journal of Higher Education* (Delhi) 3(1); Monsoon 77: 73-88.

EVALUATION

- HSU, Louis M. "Determination of significance levels for tests of item validity". *Educational & Psychological Measurement* 38(2); Summer 78: 209-11.
- Lewis, William A, Dexter, H. Gene and Smith, William C. "Grading procedures and test validation: A proposed new approach". *Journal of Educational Measurement* 15(3); Fall 78: 219-27.
- Misra, R. G and Arora, O. P. "Direct grading vs. grading via analytical making". *Journal of Higher Education* (Delhi) 3(1); Monsoon 77: 95-106.
- Rao, N. V. R. L. N. "Universities". *University News* 16(19); 1 Oct 78: 1183-4.
- Natarajan, V. "Question choice in examinations". *Journal of Higher Education* (Delhi) 3(2); Autumn 77: 247-52.
- Palsane, M. N. and Khedekar, A. V. "Internal assessment; objective test and final examination". *Journal of Higher Education* (Delhi) 3(2); Autumn 77: 237-45.
- Roid, G. H. and Haladyna, Thomas M. "Comparison of objective-based and modified-Bormuth item writing techniques". *Educational & Psychological Measurement* 38(1); Spring 78: 19-28.
- Shah, K. J. Randir Singh and Barlingay, S, S. "Reactions to the objective testing techniques". *Journal of Higher Education* (Delhi) 3(2); Autumn 77: 253-6.
- Stanffer, A. J. "Information derived from an objectivity study of an interview schedule". *Educational & Psychological Measurement* 38(2); Summer 78: 501-5.
- Venkata Rami Reddy, A. "Attitude of postgraduate students towards internal assessment". *Indian Educational Review* 13(3); July 78: 16.
- Wood, Robert. "Placing candidates who take different papers on the same mark scale". *Educational Research* 20(3); June 78: 210-5.

ECONOMICS OF EDUCATION

- Ghali, Moheb, Miklines, Walter and Wada, Richard. "Demand for higher education facing an individual institutions". *Higher Education* 6(4); Nov 77: 477-87.
- Sadlak, Jan. "Efficiency in higher education: Concepts and problems". *Higher Education* 7(2); May 78: 213-45.
- White, Fred C and Musser, Wesley N. "Business cycles and state governmental finances: Implications for higher education". *Higher Education* 7(2); May 78: 177-92.

PROFESSIONAL EDUCATION

- Sharma, N. L. and Surendra. "Job-oriented training and specialisation in geology". *Journal of Higher Education* (Delhi) 3(2); Autumn 77: 173-80.

COMPARATIVE EDUCATION

& COUNTRY STUDIES

- Abraham, A. S. "Attack on research council". *Times Higher Education Supplement* (364); 3 Nov 78: 6.
- De Francesco, Corrado. "Growth and crisis of Italian higher education during the 1960s and 1970s." *Higher Education* 7(2); May 78: 193-212.
- Giles, Geoffrey J. "Structure of higher education in the German Democratic Republic". *Higher Education* 7(2); May 78: 131-56.

CLASSIFIED ADVERTISEMENTS

MADURAI KAMARAJ UNIVERSITY

Madurai-625021

Notification No. 6/V/Adv/78

Applications in the prescribed form are invited for the following posts in the University:

Reader

- | | |
|--|-------|
| 1. Reader in Cell Biology | 1 no. |
| 2. Reader in Plant Genetics | 1 no. |
| 3. Reader in Immunobiology | 1 no. |
| 4. Reader in Microbiology | 1 no. |
| 5. Reader in Environmental Biology | 1 no. |
| 6. Reader in Econometrics | 1 no. |
| 7. Reader in French | 1 no. |
| 8. Reader in Mathematics (temporary) | 1 no. |
| 9. Reader in Medieval History | 1 no. |
| 10. Reader in Gandhian Studies & Ramalingar Philosophy | 1 no. |

Lecturer

- | | |
|--|--------|
| 1. Lecturer in Human/Population Genetics | 1 no. |
| 2. Lecturer in Sociology | 1 no. |
| 3. Lecturer in Agricultural Geography | 1 no. |
| 4. Lecturer in French | 1 no. |
| 5. Lecturers in Commerce (ICC&CE) | 3 nos. |
| 6. Lecturers in Economics (Department) | 2 nos. |
| 7. Lecturer in Economics (ICC&CE) | 2 nos. |
| 8. Lecturers in English (Dept.) | 2 nos. |
| 9. Lecturers in English (ICC&CE) | 3 nos. |
| 10. Lecturer in Plant Genetics | 1 no. |
| 11. Lecturer in History (ICC&CE) | 1 no. |
| 12. Lecturer in Political Science | 1 no. |
| 13. Lecturer in Gandhian Studies and Ramalingar Philosophy | 1 no. |

Scale of Pay

Reader : Rs. 1200-50-1300-60-1900
Lecturer : Rs. 700-40-1100-50-1600

Preference would be given to Scheduled Caste/Scheduled Tribe candidates who are considered fit in the case of Lecturers.

Qualifications

Reader

Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods and production of instructional materials.

About five years' experience of teaching and/or research provided that at least

three of these years were as Lecturers or in an equivalent position.

This requirement may be relaxed in the case of candidates with outstanding research work.

Lecturer

(a) A Doctoral degree or research work of an equally high standard; and

(b) Consistently good academic record with I or high II class (B in the seven point scale) Master's degree in the relevant subjects from an Indian University or an equivalent degree of a foreign University.

The prescribed form of application and other details can be got from the undersigned on requisition accompanied by

(i) a self-addressed envelope with postage stamps to the value of 0.85 paise affixed thereon and

(ii) State Bank of India challan for Rs. 5/- (Account No. 1 or Demand Draft for Rs. 5/- payable at Madurai drawn in favour of the Registrar, Madurai Kamaraj University, Madurai-625021)

Note : Academic qualifications and experience prescribed are indicative of the general requirement.

For details in individual specialisation, candidates may apply for application forms and instructions to candidates.

The last date of receipt of applications is 18-12-1978. Applications received after the due date will not be considered.

Those who have responded to a previous notification need not apply again.

B. Murugan
REGISTRAR

UNIVERSITY OF KERALA Trivandrum

No. Ad. A.II.3.304/77

Notification

Applications are invited from qualified candidates for appointments to the following posts:

- (1) One post of Reader in Science Education on Rs. 850-1450 in the University Department of Education. (Reserved for persons belonging to Backward Communities/Scheduled Castes/Scheduled Tribes.)
- (2) One post of Lecturer on Rs. 600-1250 in the University Department of Malayalam.

Further particulars and application forms can be had from the University Office on production of a receipt for Rs. 2/- remitted to the Kerala University Fund Account in any branch of the State Bank of Travancore or on payment of the amount by crossed Postal Order payable to the Finance Officer, University of Kerala, Trivandrum. Requests for application forms

should be addressed to the Deputy Registrar (Administration), University of Kerala, Trivandrum.

Last date for receipt of application is 15-12-1978.

C. K. Devassy
REGISTRAR (Officiating)

OSMANIA UNIVERSITY Hyderabad-500 007 (AP)

Corrigendum to the
Advertisement No. 14/1978

For the post of Professor of Urdu, the specialisation 'IQBAL STUDIES' indicated in the advertisement No. 14/78 is deleted.

Consequently the last date for receipt of applications for the post of Professor of Urdu has been extended upto 30-11-1978.

B. Ramachandra Reddy
REGISTRAR

SAMBALPUR UNIVERSITY Jyoti Vihar, Burla

Corrigendum to Advertisement
No. 18689/TDS. Dt. 4-11-78

The following be inserted in the aforesaid advertisement.

"The last date for receipt of applications for the post of Lecturer in Home Science only is extended up to 2-1-1979.

J. Mohapatra
ASSTT. REGISTRAR (Exam.)

MAHARSHI DAYANAND UNIVERSITY Rohtak

Wants. Lecturer in Mathematics with specialization in Statistics (leave vacancy for two years in University Evening College, Rohtak), having (a) consistently good academic record with at least Ist or high second class (B in the seven point scale) Master's degree in the relevant subject and (b) M.Phil degree or a recognised research degree beyond Master's level or published work indicating capacity for independent research work. UGC pay scale applicable.

Applications (through proper channel) with bio-data and crossed postal order(s) for Rs. 10/- in favour of Chief Accounts Officer payable at Post Office Rohtak be sent to Registrar by 15.12.1978. No fee from ESM/SC/BC/ST candidates. Post carries usual allowances and benefit of leave as per rules. Higher starting salary/relaxation in qualifications in exceptionally qualified candidates. Knowledge of Hindi essential.

REGISTRAR

UNIVERSITY OF SAUGAR

Sagar

Advertisement No. R/1/78.

Applications on a prescribed form obtainable from the Office of the Registrar on requisition accompanied by a self addressed stamped envelope and a Postal Order of Rs. 5/- as application fee, are invited for the following permanent (except where specified otherwise) posts so as to reach the Registrar, University of Saugar on or before 7th December, 1978.

2. Candidates already in service should send their applications through the proper channel. An advance copy, however, may be sent direct.

3. Candidates selected for interview will have to come to Sagar at their own expense and bring with them their original research papers, degrees and certificates and mark-sheets of Higher Secondary / Intermediate/Pre-University Examination, Bachelor's and Master's degree examinations for verification.

4. The period of probation shall be two years from the date of appointment. This period of probation may, however, be extended by such further period as the Executive Council may deem fit, but the total period of probation shall in no case exceed three years. Service during the temporary appointment, including the probationary period, may be terminated as per University rules.

5. The age of retirement is sixty years.

6. The University reserves the right to negotiate with suitable person or persons, if necessary, who may not have applied.

7. Preference will be given to Scheduled Caste and Scheduled Tribe candidates if found suitable.

8. The University reserves the right to fill up or not to fill up the posts and/or to call only selected candidates, for interview. The number of posts likely to be filled may vary.

9. The candidates must mention in each case the branch of their specialisation and must show their qualifications from matriculation upwards indicating in each case the marks/percentage of marks/division/grade and the subjects taken.

10. Scale of Pay :

Professor	: Rs. 1300-50-1500-75-1800-100-2000.
Reader	: Rs. 1100-50-1600.
Lecturer	: Rs. 620-40-900-50-1400.
Technician/	: Rs. 380-12-500-EB-15-560
Technical Asstt.	(Subject to the approval of the State Government).
Instructor	
Pharmacy	: Rs. 200-15-290 (likely to be revised).
College of	
Education	: 246-6-270-10-350-EB-124-400-20-460.

QUALIFICATIONS FOR PROFESSORS AND READERS

- (a) (i) A Doctor's degree or published work of an equivalent high standard; and
- (b) (i) A 2nd class Master's degree in a relevant subject with at least 50% marks (B in the seven point scale) or an equivalent degree of a foreign University; and

N.B.: (While taking into account the marks/grade, the marks/grade obtained in internal assessment if any, shall be excluded).

- (ii) At least 50% marks at the Bachelor's degree examination on the basis of which division is awarded at the degree level by the University; and
- (iii) At least 50% marks at the Higher Secondary / Intermediate / Pre-University Examination, as the case may be.

and

- (c) (i) In the case of Professors the experience of teaching of post-graduate classes shall be at least 10 years and in the case of Readers the experience of teaching post-graduate classes shall be at least 5 years; and
- (ii) In case of Professors evidence of candidate/s having been awarded a Doctor's degree under his supervision and in the case of Reader at least three years experience of guiding research.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published research work is of very high standard, it may relax any of the qualifications prescribed in (b) above.

N.B.: The requirement regarding minimum percentage of marks shall be relaxed upto 5% in case of scheduled castes/scheduled tribes candidates.

QUALIFICATIONS FOR LECTURERS

- A (a) (i) A Doctor's degree or published research work of an equivalent high standard; and
- (b) (i) A 2nd class Master's degree in a relevant subject with at least 50% marks (B in the seven point scale) or an equivalent degree of a foreign University; and

N.B.: (While taking into account the marks/grade, the marks/grade obtained in internal

Examination, as the case may be

Having regard to the need for developing inter-disciplinary Programmes the degree in (a) and (b) (i) above may be in relevant subjects.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing the following qualifications may be recruited :-

- B (i) A 2nd class Master's degree in a relevant subject with at least 50% marks (B in the seven point scale); and

N.B.: (While taking into account the marks/grade, the marks/grade obtained in internal assessment, if any, shall be excluded).

- (ii) 2 years' experience of research work or practical experience in research laboratory / research organisation; and
- (iii) At least 50% marks at the Bachelor's degree examination on the basis of which division is awarded at the degree level by the University; and
- (iv) At least 50% marks at the Higher Secondary/Intermediate/Pre-University examination, as the case may be.

OR

- C (i) A Master's degree with first class or Grade 'A' in a relevant subject; and
- (ii) At least 50% marks at the Bachelor's degree examination on the basis of which division is awarded by the University; and
- (iii) At least 50% marks at the Higher Secondary/Intermediate/Pre-University Examination as the case may be.

Provided further that in the case of categories (B) and (C), a candidate will have to obtain a Doctor's degree/M.Phil. degree or have to his credit published research work of equivalent standard within 5 years of his appointment failing which he will not earn future increments until he fulfils these requirements.

N.B.: The requirement regarding minimum percentage of marks shall be relaxed upto 5% in case of scheduled castes / scheduled tribes candidates.

QUALIFICATIONS FOR TECHNICAL ASSISTANT (ECONOMICS)

At least a Second class Master's degree in Economics/Statistics with experience of tabulating data on Power Samas machines.

QUALIFICATIONS FOR INSTRUCTORS

- (a) At least a Second class Master's degree of an Indian University or equivalent qualification of a foreign University in the subject concerned.

assessment, if any, shall be excluded).

- (ii) At least 50% marks at the Bachelor's degree examination on the basis of which division is awarded at the degree level by the University; and
- (iii) At least 50% marks at the Higher Secondary / Intermediate / Pre - University

Provided that in the case of Pharmaceutical Science, the minimum qualification shall be at least a II class B. Pharm. OR B.E. (Chemical Engineering) degree.

(b) Knowledge of Hindi will be desirable.

NUMBER OF POSTS IN EACH SUBJECT

Subjects	Professors	Readers	Lecturers	Others	Specialisation
1. Physics	1	1*	—	—	Professor in Solid State.
2. Chemistry	1	—	—	—	Physical/Inorganic/Analytical.
3. Anthropology & Sociology	1	1+1*	—	—	One permanent Reader in Social Biology/Cytogenetics.
4. Mathematics	—	1*	—	—	
5. Criminology & Forensic Sc	—	—	1*	—	
6. Geography	—	—	1*	—	
7. Zoology	1	—	—	—	Reproductive Physiology, Endocrinology, Developmental Physiology OR Fish & Fisheries.
8. Botany	—	1*	—	—	
9. Applied Geology	—	2*	1+1*	—	
10. Pharmaceutical Sciences	—	—	—	2	Temporary Instructors.
11. Economics	—	—	—	1	Technical Asstt.
12. Hindi	—	—	1+2*	—	
13. English	—	2	—	—	One Reader in Comparative Aesthetics/Language teaching.
14. Library Science	—	1	—	—	
15. Yogic Studies	—	—	1	—	
16. Commerce	—	1	—	—	Accountancy.
17. Law	1	—	—	—	
18. Education	—	—	—	1	Instructor (Craft).

*Appointments temporary against lien/leave vacancies. Only on termination of the lien/appointees will be entitled for permanent appointment according to rules.

CENTRAL INSTRUMENTATION LAB. & WORKSHOP

Two Technicians (One in Glass Blowing & One in Optical Shop)

Essential Qualifications

Glass Blowing : 10 years schooling and four years experience.

Optical Shop : 10 years schooling and five years experience in the trade.

GARHWAL UNIVERSITY Srinagar (Garhwal) U.P.

Wanted

1. Professor in Economics and Education (one each). Pay scale Rs. 1500-60-1800-100-2000-125-2500.
2. Reader in Hindi, Commerce and Economics (one each). Pay scale Rs. 1200-50-1300-60-1900.
3. Principals for Tehri and Pauri Colleges. Pay scale Rs. 1200-1900.
4. Lecturers in English, History, Zoology, Home Science, Music, Secretarial Practice, Geography, Forestry, Hindi, Education, Commerce and Journalism (one or more). Pay scale Rs. 700-40-1100-50-1600.
5. Lecturer in Mathematics, leave vacancy for three years (Specialization in Measure Theory and Differential Geometry). Pay scale Rs. 700-1600.
6. Lecturer in Botany, leave vacancy for three years. Pay scale Rs. 700-1600.
7. Lecturer in Physics, leave vacancy for one year. Pay scale Rs. 700-1600.

Services of Lecturers are transferable from one constituent college to another i.e. SRINAGAR, PAURI, TEHRI.

Category 1, 2, 3 and 4 All posts are temporary but likely to be made permanent.

Minimum Qualifications for Lecturers

- A) Doctorate degree or published work of a high standard in the subject concerned; and
 - B) Consistently good academic record (i.e. the overall record of all assessment throughout the academic career) with first or high second class (i.e. with an aggregate of more than 54% marks) Master's degree in the subject concerned or equivalent degree of a foreign University, in such subject.
2. Where the Selection Committee is of the opinion that the research work of a candidate as evidenced either by his thesis or by his published work is of a very high standard, it may relax any of the requirements in the qualification specified in (B) above.
 3. For Principal : As per lecturer, besides he must have a good academic record and a doctorate degree in one of the subject taught in the college with adequate teaching experience of degree/post-graduate classes and five years experience of principalship of a degree college or five years administrative experience.

4. For Professor : As per lecturer, besides he must be eminent scholar in the subject and possess at least ten years experience of teaching P.G. classes and guiding research in the subject.

5. For Reader : As per lecturer, besides he must have five years teaching experience of P.G. classes and guiding research in the subject.

6. University will try to provide residential facility at least to the Professor and Reader in the University Campus at the rate of 10% of the pay.

Apply on prescribed form to be had from the undersigned either personally or by sending self-addressed envelope (5" X 11") with postal stamps worth Rs. 2.80. Application on prescribed form alongwith attested copies of certificates, marksheet, research work etc. and a crossed Bank Draft of Rs 7.50 payable to the Registrar, Garhwal University, Srinagar (Garhwal) U.P. should reach the undersigned latest by 10-12-1978. Preference will be given to Harijan candidates.

**Ram Surat
REGISTRAR**

ADVERTISEMENT

SHIVAJI UNIVERSITY, KOLHAPUR

(Maharashtra State)

Applications are invited for the following posts :—

1. **Professor** : Two Professors in Physics [One in Solid State Physics (Experimental--Semi-conductors), Other Open], One each in Zoology (Aquatic Biology & Fisheries or Animal Physiology), Economics, (Agriculture & Co-operation and Regional Economics), History (Maratha History), Politics (Behavioural Studies/Constitutions), *Marathi.
2. **Reader** : Two Readers in English [One in Indian Writing in English/American Literature and one in Linguistics (English Language) and English Language Teaching], One each in Chemistry (Fine Chemicals), Botany (Open), Physics (Electronics/Materials Science/Solid State Physics/Theoretical Physics), Mathematics (Pure Mathematics) Economics (Preferably Mathematical Economics), History, (Medieval History), Sociology (Open), *Marathi.
3. **Lecturer** : Three Lecturers in Chemistry (Two in Organic Chemistry and one in Sugar Chemistry), Two Lecturers in English (One in any branch (British or American Literature/Indian Writing in English/Comparative Literature/Aesthetics) and One in English Language and English Language Teaching), Two lecturers in *Marathi, One each in Mathematics (Statistics), Sociology (Open), Politics (Behavioural Studies/Constitutions). *Marathi :—One Lecturer in Linguistics and the remaining three persons specialized in Old and New Marathi Literature.
The teachers should be in a position to guide M. Phil. and Ph. D. research in the following :
i) Aesthetics and Poetics ii) Theatre and Literature iii) Comparative Literature iv) Sociology of Literature and v) Linguistics.
4. **Journalism** : One Director
5. **Sports** : One Coach for Cricket/Table Tennis/Foot-Ball.

For the original and detailed advertisement please see daily Hindu, Madras/Hindustan Times, New Delhi (14th November, 1978), Indian Express, Bombay or contact the Registrar of the University

Kolhapur

Date: 18-11-78

USHA ITHAPE
REGISTRAR

INDIAN INSTITUTE OF TECHNOLOGY, KANPUR

IIT Post Office, Kanpur 208016

Corrigendum

Corrigendum to the Advertisement No. 27/78 of the Institute

The number of positions of Assistant Professor/Lecturer available in the Department of Electrical Engineering are Fifteen (15). The Department is looking for faculty in the following areas of specialisation :

- (i) Power Systems
- (ii) Electronic Circuits
- (iii) Communications
- (iv) Computers
- (v) Controls
- (vi) Network and Systems

Last date for receipt of applications in the prescribed form obtainable from Registrar, I.I.T., Kanpur is extended to **December 15, 1978.**

THE UNIVERSITY OF BURDWAN

Rajbati : Burdwan

West Bengal

Advertisement No. 6/78-79

Dated 21 November, 1978

Applications in the prescribed form are invited for the following posts in the approved scales of pay of Rs. 1500- 60-1800- 100- 2000- 125/2- 2500/- with allowances and other benefits according to University Rules.

- A. Professor of Botany—One post
- B. Professor of Philosophy—One post

Minimum Qualifications

1. (a) A Doctor's Degree or published research work of an equally high standard and
- (b) Consistently good academic record with First or high Second Class (B in the seven point scale) Master's Degree in the relevant subjects or an equivalent degree of a foreign University.

2. Additional Requirements

- (i) At least ten years' teaching experience in Post-Graduate Classes;
- (ii) Competence to plan and Supervise Research project;
- (iii) Publication of sufficient merit.

The University Council may, on the recommendation of the appropriate Selection Committee, waive any of the requirements in view of the candidate's specialised knowledge in the subject. The choice of the Committee need not necessarily be confined to those who apply formally.

For application form and other information apply to the Registrar with a self-addressed stamped (0.40p.) envelope (9"×4").

Last date for submission of applications with the requisite fee of Rs. 5/- is **20 December, 1978.**

REGISTRAR

GUJARAT AGRICULTURAL UNIVERSITY

Sardarkrishinagar 385506

Advt. No. 4/78

The applications are invited in prescribed forms for the following posts in Gujarat Agricultural University.

Posts and scales
1. Research Scientists (Rs. 1500-2500)

Disciplines

Plant Pathology, Soil Science, Agril. Botany (for Tobacco Research).

2. Associate Research Scientists (Rs. 1200-1900)

Agronomy, Agril. Botany, (for Tobacco Research).

Application form and other details regarding qualifications and experience can be had from the Registrar, Gujarat Agricultural University, Sardarkrishinagar 385506 (Dist. Banaskantha) on cash payment of Rs 2 or by sending crossed Indian Postal Order of equal amount issued in favour of "Comptroller, Gujarat Agricultural University, Sardarkrishinagar alongwith the self addressed envelope (23 cm x 11 cm) affixed with 0.50 paise postage stamps.

The candidates already in the services of this University may apply through their respective officers on plain papers.

Last date for receiving the application forms complete in all respects is 15.12.1978.

M. P. Vaishnav
REGISTRAR

TECHNICAL TEACHERS' TRAINING INSTITUTE

(Southern Region)

Adyar, Madras 600020

Advt. No. 3/78

Applications are invited in the prescribed form for the following posts from the qualified candidates:—

1. **Professor of Education (1 No)**—Rs. 1500-60-1800-100-2000-125/2-2500—Age 35 to 48 years—First Class Master's Degree/Ph.D. in Education with Master's Degree in Arts/Science—Minimum of 7 to 10 years distinguished experience in teaching/Research in an Institution of University Standard at Post Graduate level or in a Teacher Training Institute—Specialised knowledge in any one of the fields—(1) Curriculum (2) Educational Technology (3) Educational Management and (4) Research Methodology with experience in organising and conducting inservice training programmes, Short Courses and Workshops—D.Q.—Candidates possessing experience in guiding research and professional/scientific work of outstanding merit would be preferred.

2. **Professor of Curriculum Development Unit (1 No)**—Rs. 1500-60-1800-100-2000-125/2-2500—Age 35 to 48 Yrs.—First Class Master's Degree/Doctorate in Engineering—Minimum of 7 to 10 years distinguished experience in teaching/research in an institution of University Standard at Post Graduate Level or in a Teachers' Training Institute OR 15 years of teaching experience in a Polytechnic or Engineering College out of which at least 6 years must have been at the level of a Principal or Head of Department in a Polytechnic or

other equivalent cadres—Specialised knowledge in any one of the fields—(1) Curriculum (2) Educational Technology (3) Research Methodology with experience in organising and conducting inservice training programmes, short courses and workshops. Post is temporary for one year only for the present.

3. **Four Assistant Professor**—Rs 1200-50-1300-60-1900 Age 30 to 45 years—

(1) Assistant Professor of Educational Technology (any branch of Engg)—(1 No)

(2) Assistant Professors for Extension Centres (any branch of Engg)—(2 Nos)

(3) Assistant Professor of Curriculum Development (any branch of Engg)—(1 No)

EQ: First Class Master's Degree/Doctorate Degree in Engineering—Minimum of 5 years experience in teaching/research in an Institution of University Standard or in a Teacher Training Institute OR 10 years teaching experience in a Polytechnic or Engineering College out of which at least 3 years should have been at the level of Lecturer in a Polytechnic or other equivalent cadres, Specialised knowledge in any one of the fields—(1) Curriculum (2) Educational Technology (3) Research Methodology—with experience in organising and conducting inservice training programmes, short courses and workshops and extension activities.

4. **Assistant Professor of Educational Research**—(1 No) Rs 1200-50-1300-60-1900—Age 30 to 45 years—First Class Master's Degree/Ph.D. in Education/Psychology with a Master's Degree in Arts/Science—Minimum of 5 years experience in teaching/research in an Institution of University Standard or in a Teacher Training Institute—D.Q.: Publication of research papers/monographs/reports and experience in Technical Education.

5. **Assistant Professor of Educational Communication**—(1 No) Rs 1200-50-1300-60-1900—Age 30 to 45 years—First Class Master's Degree/Ph. D. in English with a Master's Degree in Education—Minimum of 5 years experience in teaching/research in an Institution of University Standard or in a Teacher Training Institute OR 10 years teaching experience in a Polytechnic or Engineering College out of which atleast 3 years should have been at the level of Lecturer in a Polytechnic or other equivalent cadres. Preference will be given to Certificate holders in Linguistics.

Note: Candidates serving in Government/Autonomous Institutions may also be considered on "deputation basis" for posts 1 to 5.

6. **Electronics Lab. Attender (1 No)** (Reserved for Scheduled Tribe)—Rs 200-3-206-4-234-EB-4-250—Should possess I.T.I. Certificate in Radio Mechanism with one year experience in that trade.

All Posts carry usual allowances as applicable at present to the employees of the Central Government in the Madras City.

Application forms and detailed qualifications, job description, etc. can be had from the Principal of the Institute

on requisition with a self addressed envelope (23 x 9 cms) duly affixing postage stamps to the value of 85 paise. In respect of post No. 6, it is enough if they apply in a plain paper giving details regarding their Name & Address, Age, Educational Qualifications, experience and other details supported by attested copies of certificates.

Applications completed in all respects should reach the Principal on or before 30.12.1978.

N.B.: E.Q/D.Q.—Essential / Desirable Qualifications.

PRINCIPAL

PUNJABI UNIVERSITY

Patiala

Advertisement No. 237/SPS/Estt./78

Applications are invited for the following posts:

1. **Professor in the Department of Speech, Drama and Music.**

(Grade Rs. 1500-60-1800-100-2000-125/2-2500).

Qualifications

(a) An eminent scholar with published work of high quality and actively engaged in research and/or practical work in Theatre,

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge in Theatrical Art.

(b) Ten Year's experience of teaching and/or research or practical work in Theatre, Experience of guiding and research at doctoral level desirable.

2. **Lecturers in Dramatic Art: Two**
(Grade Rs. 700-40-1100-50-1600).

Qualifications

Candidates should be M.A. in Dramatic Art from any Indian or foreign University, preferably with 3 years' practical experience in Theatre.

Specialisation

(i) Stage-craft and (ii) Dance, Mime and Movement.

General

Higher start within the grade admissible depending upon the ability and experience of the candidate. House rent and Dearness allowance, Provident Fund and Medical facilities according to the University rules.

Applications, complete in all respect on the prescribed form, accompanied by a crossed postal order worth Rs. 5/- (Rs. 2/- for candidates belonging to Scheduled Castes/Tribes and Backward Classes) drawn in favour of the Registrar, Punjabi University, Patiala should reach the University by 11.12.78. The forms can be had from the Superintendent (Establishment) by sending a self-addressed envelope of the size of 23 x 10 cms stamped with 25 paise postage.

Persons already in service should apply through proper channel; Govt. servants who are not in a position to submit their applications through proper channel before the due date should submit an advance copy before the due date and regular applications through proper channel by 14.12.78.

Gurbachan Singh
REGISTRAR

BIDHAN CHANDRA KRISHI VISWA VIDYALAYA

P.O. Mohanpur, West Bengal

Advertisement No. Apptt./3/78

Applications in prescribed forms are invited for the post of

REGISTRAR

In the scale of Rs. 1100-50-1300-60-1600/- (under revision—likely to be revised to Rs. 1500-2000/-) or as may be determined by the appropriate authority of the Viswa Vidyalaya—other allowances as admissible.

Qualifications : Essential : A Post-graduate degree of a recognised University and sufficient administrative experience for at least 10 years in academic Institution/Universities/Scientific Institution.

Age : Preferably below 50 years.

Selected candidate will have to reside in the Viswa Vidyalaya Campus.

Qualifications may be relaxed in case of candidates who may be otherwise found suitable. A higher initial pay in the scale may be granted on the basis of qualifications, experience and present emoluments.

Applications must be submitted in the prescribed form which may be obtained from the Office of the REGISTRAR, BIDHAN CHANDRA KRISHI VISWA VIDYALAYA, P.O. MOHANPUR, DIST NADIA, WEST BENGAL personally or by sending self addressed envelope (25 cm×12 cm) stamped 0.25 (twenty five paise only) ON PAYMENT OF RUPEES EIGHT (Rs. 8.00) for the post by CROSSED INDIAN POSTAL ORDER in favour of the BIDHAN CHANDRA KRISHI VISWA VIDYALAYA. Persons already in employment should apply through proper channel. Applications, completed in all respect should be submitted in an enveloped superscribed with the name of the post and must reach the OFFICE OF THE REGISTRAR BY THE 15th DECEMBER 1978.

Candidates called for interview will have to appear for the same at their own cost.

A. K. Mitra
Acting Registrar

UNIVERSITY OF SAUGAR **Sagar**

Advertisement No. R/2/78.

Applications are invited for the post of Registrar so as to reach the Vice-Chancellor, University of Saugar, Sagar on or before 16 December, 1978. Application be sent on plain paper with postal order of Rs. 5 - stating full name and address, date of birth, detailed qualifications from matriculation onwards with division and experience etc.

2. Persons already in service should send their application through proper channel. An advance copy, however, may be sent direct. The application should carry a testimonial with regard to the work and conduct of the candidate from the Head of the Institution he is serving or has last served.

3. Applicants, if called for an interview before a Selection Committee, will not be paid any travelling or other allowance. They will bring with them their original documents, degree etc. in support of their application.

4. The appointment will be temporary against leave/lien vacancy and only on termination of the lien the appointee will be entitled for permanent appointment according to rules.

5. The period of probation shall be two years from the date of substantive appointment to permanent post. This period of probation may, however, be extended by such further period as the Executive Council may deem fit, but the total period of probation shall in no case exceed three years. Service during the temporary appointment including the probationary period may be terminated without notice and without assigning any reason.

6. The age of retirement is sixty years.

7. The University reserves the right to negotiate with suitable person or persons, if necessary, who may not have applied.

8. Preference will be given to Scheduled Caste/Scheduled Tribe candidates if found suitable

9. The University reserves the right to fill or not to fill the post and/or to call only selected candidates for interview.

10. Scale of Pay : Rs. 1100-50-1300-60-1600 with D.A. and P.F. benefits, according to University rules. (Scale of pay likely to be revised).

11. **Qualifications :** Applicants should have at least a Second Class Master's degree of a statutory Indian University or a degree recognised as equivalent thereto. They should possess at least ten years' experience in a responsible academic/executive position in a University or College or a Government Department or a Business organisation of repute. They should also have a good command of English and Hindi languages.

Capacity to develop a corporate life in a residential academic institution and understanding of the problems of students and faculty will be desirable.

In a very deserving case, however, the conditions regarding academic qualifications may be relaxed.

ALIGARH MUSLIM UNIVERSITY

Aligarh

Advertisement No. 23/78-79

Applications, on the prescribed form, are invited for the following posts.

Candidates must possess Medical qualifications, included in 1st or 2nd schedule or part II of the 3rd Schedule (other than licentiate qualifications) of the Indian Medical Council Act, 1956. Holders of Educational qualifications included in Part II of 3rd schedule should fulfil the conditions stipulated in Section 13(3) of the Indian Medical Council Act, 1956. Must possess a basic University or equivalent qualifications entered in Schedules under State/Central Medical Registration Act. For the posts at S. No. 1&2.

1. **Reader in Paediatrics (Temporary)**
Scale Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications : M.D. (Paediatrics)
Speciality Board of Paediatrics (USA)
As Asstt. Professor/Lecturer in Paediatrics for three years in a Medical College.

Desirable

Publication of Research papers.

2. **Reader in Tuberculosis & Chest Diseases (Temporary)**

Scale: Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications : M.D. (Tuberculosis)
M.D./M.R.C.P. in Medicine with T.D.D., D.T.D. or D.T.C.D.

As Asstt. Professor/Lecturer in Tuberculosis for three years in a Medical College.

Desirable

Published research work in the speciality.

3. **Lecturers in Hindi, (Temporary but likely to become permanent)**

Scale Rs. 700-40-1100-50-1600 plus allowances.

Qualifications

(a) A Doctor's Degree or research work of an equally high standard & (b) Consistently good academic record with first or high second class (B in the seven point scale) Master's Degree in a relevant subject or an equivalent degree of a foreign University.

Having regard to the need for interdisciplinary programmes, the degrees in (a) and (b) above may be in relevant subjects.

Desirable

Some teaching experience of graduate classes.

4. **Lecturer in Sunni Theology (Temporary but likely to become permanent)**

Scale Rs. 700-40-1100-50-1600 plus allowances.

Qualifications

(a) A Doctor's Degree or research work of an equally high standard; and (b) consistently good academic record with Ist or High 2nd class (B in the seven point scale) Master's degree in a relevant subject or an equivalent degree of a foreign University.

Having regard to the need for developing interdisciplinary programmes, the Degree in (a) and (b) above may be in relevant subjects.

Prescribed application forms and instructions may be had from the Deputy Registrar (Executive) either personally or by sending a self addressed envelope of 23 x 10 cm. Last date for receipt of applications is 16 December 1978. Incomplete applications and those received late may not be considered.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T.A. equal to one single Second Class Railway fare only.

Jamalur Rahman
REGISTRAR

A.I.U. PUBLICATIONS

	(Rs.)
1. Universities Handbook—1977	140.00
2. Handbook of Medical Education—1978	10.00
3. Association of Indian Universities—History	50.00
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Hony. Editor : ANJNI KUMAR

Education for Non-Violence

Shib K. Mitra*

One may ask whether education can at all be considered for anything other than non-violence. The attitude of non-violence is certainly one of the best virtues of human nature which one can, and should, cultivate, and it is therefore belabouring the obvious, if one talks of non-violence as the purpose of education. Although it is implicit, in the ideal of education, it seems that education, as it is practised is departing increasingly farther away from it. I was also bothered by the fact of increasing violence in the world today in all aspects of life. Educational institutions have become plagued with violence of all kinds. Is there anything in the institutional set-up, or in the arrangement of instruction, or in something else in education itself, or in any aspect of it? Or, is it all a reflection of what is happening in the society outside the educational institutions?

It is easier to talk about violence than non-violence. We see violence all around us. It seems that aggression is an essential part of the process of living. In its weakest form, and in its most acceptable form, it appears as assertiveness. in animals as well as in human beings.

As I think of non-violence, I find that it is an attitude of a person, or of a group of persons, or of the state, which is not just a negative of violence. It negates violence. But more than that, non-violence implies an attitude of understanding, sympathy, cooperation, kindness and love. Yet the fact remains that life requires assertiveness. Life has to assert itself over matter, and create something out of it, so as to enhance life itself. 'Survival of the fittest' does not require removal of the other one from the face of the earth. It is against this characteristic of life, and against the historical background of having great thinkers like Mahatma Gandhi and others, who emphasised the virtues of non-violence and peace even in the dark ages and periods of human history of tyranny and bloodshed, battles, and wars, and particularly, against the emerging background of deadly destructive weapons, using nuclear reaction and satellite in the sky, that we have to consider very seriously what education can contribute to make man increasingly non-violent, and, perhaps, at some future date, bring into the world a non-violent social order.

Education in itself is a process by which a man develops his potentialities and expands his horizon. In so far as it is concerned with realization of one's potentialities, it may be argued that if a person has the potentiality of destructiveness, even this will be brought out by education. This, however, is not

*Director, NCERT.

true. Instead of taking out the aggression into open, education is likely to enhance the capabilities of self-control in the person, thereby modulating the expression of destructiveness.

It is, because of this function of education as a moderator that people have faith in education, and society has always considered education as an instrument in its hands, which will control the deviants in the society in order to bring them in line with the rest of the individuals, who conform to the social standards and norms prescribed by the society. This raises the question whether potentiality of becoming violent and destructive exists in all individuals or only in some, and whether it is genetically determined. As in the matter of intelligence, it seems that aggressive behaviour is influenced partly by the genes and partly by environment. Studies on criminal behaviour indicate that there is a type of criminal act leading to violence and destructiveness which is totally unaccompanied by any emotion of anger or hatred. These are cases of coolly calculated murder. Thus the picture that we have of knowledge in this field is not very clear and we do not have a clear answer to the question I had raised earlier.

We have, on the contrary, certain other kinds of evidence which seem to indicate that man's aggressive tendency, even if it is considered to be a part of man's nature, can be considerably modified and mellowed by suitable educational experiences. We have the classic case of Valmiki, who underwent an experience of conversion, and was a completely changed man. He was a robber and became a saint. We have also the other classic cases of Gautama Buddha and Emperor Ashoka. These cases show that non-violence potentially exists in man. It only requires some special kind of experience to bring out this peaceful potentiality in man. In that case one can meaningfully talk of education for non-violence.

Let us consider some of the aspects of education in this context and think of some ways by which education can be changed in a suitable manner so as to contribute to non-violence. It seems to me that education in modern times is concerned more with means rather than ends.

Economic power

Whatever knowledge contributes to greater economic power is considered better than other knowledge. This was a big change from the early history of education when pursuit of knowledge per se was considered to be a virtue in itself. As knowledge became more emphasised in the schools, colleges and universities, the process of knowing became less important. The content of knowledge became important and man was no longer free to discover knowledge for himself. One can easily see how an emphasis on knowledge, in terms of content, can lead to cramming as the method of learning, and lecturing and note-writing as the method of instruction. We find that the syllabus and the examination have become the all important aspect of modern educational system because of the over-emphasis on the content aspect of knowledge, which alone is considered to be valuable. The relationship of acquisition

of knowledge in educational institutions with economic power has been a harmful development in modern times, which has led to a devaluation of education, and has led to increasing commercialisation of the educational institution.

One also finds that education is becoming increasingly concerned with training in skills which will enable man to earn his livelihood. Attempts have been made to relate education directly with gainful occupation.

In a country like ours where a large majority of the people live under very difficult conditions of poverty, both in rural and urban areas, it is difficult to delink education from economic power. The talk of delinking of degrees from employment is pertinent in this context. But degrees cannot be delinked unless, in all the stages of education, a fundamental change is brought about, and education becomes concerned more with the important ends of human life, leaving the means to be acquired by the individuals concerned through other avenues in the society. It is in this context that one sees the futility of the structural changes proposed in education. A mere structural change in education is really tinkering with the educational system, which has become so closely interlinked with the commercial society of today. Besides, without bringing about a structural change in the society which is rooted in exploitation and violence, a basic structural change in education cannot lead us very far.

I think that education for non-violence requires some basic changes in curriculum and the processes of teaching and learning. Non-violent behaviour can emerge only when conscience is aroused. If we look at our education today, we find that neither in the curriculum nor in the teaching-learning processes there is any scope to even consider the arousal of conscience in individuals as an important aim of education. The curriculum should reflect, as also the entire instructional arrangement, an emphasis on the process of education rather than its product. Hence, it is important to give back to the teacher the due importance that the teacher had in the past, and let the teacher evaluate the process, as and when it takes place, and cumulate it over a period of time so as to give a final assessment at the end, based on observation spread over a long period of time and a large variety of situations.

Cooperation stressed

Another change in the instructional arrangement should be in emphasising cooperation rather than competition. School work should not be so much individual as group work. It is through group work that the individuals will learn to value cooperation. At every stage, in doing cooperative work one has to confront the ego of others as well as of one's own. It is through the mastery of the egoistic impulses, which disturb the group processes in any cooperative venture, that the individual begins to learn how to be non-violent. If you examine the present instructional system, you will find that it is all oriented

(Continued on page 1313)

Teaching and Testing Language Literature by Objectives

Satyapal Julka*

In one of his articles entitled 'Examinations Versus Education' in 'The Oxford Magazine', Bateson made a very interesting observation : 'An undergraduate comes to a University to be educated; instead he finds himself being 'prepared' for this or that examination. If he acquires some incidental education—generally from his fellow undergraduates or dons on duty—this is secondary to continuous rehearsal for a series of invigilated three hour papers that are to be the culmination of his career'.

The remarks about Oxford University are pertinent to the situation that obtains at our universities also. In our system of education also there has been an over-emphasis on end-of-course/year examination. A preparation for these examinations, a pass or fail, however, has not always been an index of a student's learning. We are all aware of the criticism that our examinations are not a true test of the abilities of students. One is reminded of T.H. Huxley's criticism of the British system in the last century that students worked to pass not to know, and that nature took its revenge and they passed but did not know.

Here, then is the need for establishing a cohesion of the curriculum, teaching and testing in education so that they function as indissoluble parts of a trinity. It is in the clarification and specification of the educational objectives that this can be obtained. 'An educational objective is a statement of what students are to know, be able to do, prefer or believe as a consequence of being in a programme'.

These educational objectives are to be written in behavioural terms so that they are measureable with precision. They are to be stated in terms of the behaviour that a learner is to acquire as a result of some instructional strategy. In this sense then the terms like 'appreciate' and 'understand' are non-explicit and ambiguous as objectives. One of the strongest arguments for giving greater attention to objectives has come from those concerned with the problems of assessment. There is now an increasing desire in higher education to design more valid instruments of assessment which attempt to measure what the teacher wishes to teach, but this can only be done once the teacher has specified his objectives. It has been argued that what can be measured is the terminal behaviour, after the student has undergone a process of instruction and not the internal or implicit mental processes that are not capable of being observed. A distinction can be made, then, between general educational objectives and instructional objectives : general educational objectives can be stated in general

terms, and instructional objectives should be stated in specific terms. Understanding and appreciation for example, may be general educational objectives, but they have to be broken down into specific terminal performance for statements of instructional objectives. The best way of writing these instructional objectives is in terms of activity oriented verbal groups. For example, the general educational objective of comprehension (understanding) may be split into specific instructional objectives as follows :

1. Specifics in a communication/material/situation :
 - a) Locate specifics (as wanted or desired)
 - b) Identify/classify (by relevant criteria)
 - c) Relate/see relationship (compare, contrast, arrange in order and so on)
 - d) Detect/correct errors (in statements etc.)
 - e) Transform/convert (translate/paraphrase)
 - f) Illustrate/give examples (categories, situations, usages)
 - g) Interpretor elucidate (meaning, beauty etc.)
2. Whole communication/thing/phenomenon situation/essentially involves analysis :
 - a) Analyse into elements/relationships
 - b) Generalise (from a body of information or data)
 - c) Discriminate (by subtle differences)
 - d) Deduce/derive/conclude/extrapolate (Refer to the chart, specifying content, Behaviour and Criteria)

There have been quite a few objections to this idea of objectives on the grounds that the learner is not a complex machine but a growing organism and his own changing interests should constitute a part of the planning of his educational programme. It has been pointed out that 'the dynamic and complex process of instruction yields outcomes far too numerous to be specified in behavioural and content terms in advance. It has further been stated that in arts and literature demanding creative responses, a clear identification of behaviours to be developed is not easy. Not only that the learning outcome in these objects should really be unpredictable.

Chomsky has strongly repudiated the idea that knowledge is acquired in small incremental steps. Citing language as an example, he has pointed out that learning involves the interplay of an innate endowment, innately determined maturational process, and a process of interaction with the environment." Teaching involving some fixed domain deprives the learner to develop creative ability, by creative leaps, occasionally with genius. Since the

possibility of making this process explicit is not explored, it may be accepted as a counterview.

Specifications of Content Behaviour and Criteria

Content

- | | |
|-----------------------------|--------------------------------|
| 1. Speech Features | Selection |
| 2. Structure | ——connected——Gradation
Text |
| 3. Vocabulary | Presentation |
| Skills | |
| 4. Listening | |
| 5. Speaking | |
| 6. Reading | |
| 7. Writing | |
| 8. Literature | |
| 9. Stylistic Varieties | |
| 10. Communicative Functions | |

Behaviours

1. Knowledge
2. Comprehension
3. Application
4. Evaluation
5. Synthesis
6. Desirable interests
7. Attitude
8. Personality Traits
9. Good Habits
10. Communicative Skills

Criteria

1. Controlled Response
2. Spontaneity
3. Creativity
4. Fluency
5. Intelligibility
6. Correctness
7. Usefulness
8. Appropriateness
9. Meaningfulness
10. Enjoyment
11. Critical Awareness
12. Appreciation

Whereas it is possible that some problems may exist in arts and literature, but a large area in these subjects is quite amenable to it. 'The general point I wish to make here is that curricula if they are to be evaluated in any way must have clear objectives' (White).

The only point to be made here is that the term 'behavioural objectives' should be more clearly defined. White has given two meanings to it.

- i) Objectives which themselves consist in learners behaving in certain ways;

- ii) Objectives whose attainment is tested by observing learners behaving in certain ways.

The objectives, of course, in the appreciation of poetry may be to get students to respond to certain poems aesthetically, Aesthetic response may not be a behavioural objective in the first sense, 'but whether someone has learnt to respond aesthetically in the way required can only be tested by what he can be observed to say or write, etc.'

The next step, then, after the specification of the objectives of learning is the preparation of teaching and learning experiences simultaneously with the devising of test items.

As an illustrative model we can take up a poem, 'No Road' by Philip Larkin. So far as behaviours are concerned, in literature it hardly matters if the content is a text of five lines or a hundred lines. The behaviours of knowledge, comprehension, application, evaluation, synthesis, etc., may be simultaneously expressed. In this model, then, the objective is comprehension with other attendant objectives. The level is the first Degree Honours or postgraduate. It may, however, be modified or simplified for lower levels, as required, since in literature we move, in the words of Purves from 'grosser to finer disseminations.

NO ROAD

1. Since we agreed to let the road between us
2. Fall to disuse,
3. And bricked our gates up, planted trees to screen us,
4. And turned all time's eroding agents loose.
5. Silence, and space, and strangers-our neglect
6. Has not had much effect.
7. Leaves drift unswept, perhaps; grass creeps unmown;
8. No other change.
9. So clear it stands, so little overgrown
10. Walking that way tonight would not seem strange.
11. And still would be allowed. A little longer,
12. And time will be stronger.
13. Drafting a world where no such road will run
14. From you to me;
15. To watch that world come up like a cold sun
16. Rewarding others, is my liberty.
17. Not to prevent it is my will's fulfilment.
18. Willing it, my ailment.

- (2) Teaching Material: the planning involves

- i) a general approach to the subject;
- ii) specification of instructional objectives;
- iii) choice of some well-defined tool for an over response;
- iv) tools for assessment;
- v) criteria for assessment.

Table Showing Clause and Sentence Structure

S. No.	Subject	Predicator	Complement	Adjunct
1.	We	agreed to let fall	the road between us	since
2.	(We)	bricked up	our gates (i) to screen us	and
3.	(We)	planted	trees	—
4.	(We)	turned loose	all time's eroding agents/ (ii) silence, space, and strangers.	and
5.	Our neglect	has not had	much effect	-//I
6.	Leaves	drift	unswept	—
7.	grass	creeps	unmown	—
8.	no other change	—	—	—//II
9.	it	stands	so clear	—
10.	(it)	(stands)	so little overgrown	—
11.	Walking that would not seem way		strange	to night
12.	(Walking that would be allowed way)		—	and be still // III
13.	(it)	is	a little longer	if
14.	time	will be	stronger	and/IV
15.	(iii) drafting a world (iv) where no such road will run from you to me (v) to watch that world come up (vi) rewarding others	} is	my liberty	—//V
16.	Not to prevent it			
17.	willing it	is	my will's fulfilment my ailment	—//VI —//VII

(a) The linguistic items shown in brackets do not appear in the text.
 (b) // marks the sentence boundary and the numeral by its side the sentence number.
 (c) Terms used:
 (1) Subject: The element of a clause which can set up number concord relationships with the predicator.
 (2) Predicator: The verbal part of a clause
 (3) Complement: All nominal elements other than the subject.
 (4) Adjunct: Non-nominal elements.

TEST ITEMS / QUESTIONS

- 1) The adjunct (Binder) **Since** marks a certain point of time.

T	E
<div style="border: 1px solid black; width: 100px; height: 20px;"></div>	<div style="border: 1px solid black; width: 100px; height: 20px;"></div>

- 2) Match the verbal group under 'B' with the verbal types under 'A'

- | A | B |
|---------------|---------------------|
| 1) Action | a) brick up |
| | b) drift |
| | c) stands |
| 2) Comment | d) is |
| | e) planted |
| | f) would not seem |
| 3) Neutral | g) creeps |
| | h) has not had |
| | i) will be |
| 4) Perception | j) agreed |
| | k) would be allowed |
| 5) Others | |

- 3) A) Which of the following best describes the semantic relationship of the qualifiers **unswept, unmown** to **so clear, so little overgrown**?
- cessation of activity without much effect
 - failure of effort and consequent frustration
 - Achievement of the desired end without effort
 - neglect of duty without much damage
- B) Which of the following comes closest to the description of the subject matter of the poem?
- the ugliness of a road once in use
 - the damage done to the beauty of a road
 - the activity to render a road out of use
 - the apathy to keep a road clean.
- C) Which of the following comes closest to the description of the theme of the poem?
- dislike of two persons for each other
 - willing effort of the participants to create strangeness
 - sadness of two persons for the break of relationship

(Continued on page 1326)

English Language Teaching

—Some Problems

Urmila Rai*

In his article on "Assessing the English Language Teaching Situation in India, R. C. Arya (University News, October 15, 1978, Vol XVI, No.20) has pinned down accurately, the causes of the poor results of English Language Teaching (ELT) in this country. They are: defective syllabi, bad teaching materials, lack of teacher training and defective modes of testing, among other things. Above all, there is the teacher's inadequate knowledge of the structure of the English language; which means that most teachers of English are not properly equipped to teach the language.

Since a great deal of money goes into ELT, he has pointed out that there is much wastage of human and material resources when we consider the returns in terms of the command over the language which the students acquire at the end of their studies. The results of ELT compare very poorly with those of other Foreign Language diploma courses in the country.

There is one important aspect of ELT, however, that Mr. Arya has not taken into account—the time spent on it in school and college courses. The time in terms of hours per week as well as in terms of the number of year in the course, is, to some extent at least, dependent on the importance given to the subject. Other Foreign Language diploma courses cannot really be compared with ELT. The Foreign Language classes, whether French, German or Russian, are small; the courses are concentrated, and they are attended and paid for by highly motivated students, out of their own choice. While English is a compulsory subject in school and college curricula, along with other subjects. As such, the conditions under which English is taught, are largely governed by Government and University politics and by bureaucratic decisions.

These decisions often tend to reduce the teaching time for English, both in terms of hours per week and in terms of years over the course, in order to make room for other subjects. They also worsen the teacher-student ratio which is so important in the teaching of a language. Besides, the decisions reduce the importance of the subject in the minds of students by making such provisions as that the marks obtained in English should not count towards the class to be awarded to students at examinations.

In these circumstances, not much success can be expected in ELT.

One major factor that bedevils all efforts at ELT is the manner in which decisions are taken and educational policies are framed. We have still not arrived at a reasonable decision about the position of English in the country; and the vacillating attitude of politicians is sharply reflected in the educational policies. States are free to make their own decisions in educational matters, to some extent. Universities in the States naturally reflect the State politicians' views on English. Unfortunately, academicians who finally have the responsibility for framing courses of study, either lack breadth of vision, or are led by vested interests. Political and petty-political motives often guide their decisions. Ad hoc bodies, sometimes made up of bureaucrats, allow too short a time for a course in English at the University, as has happened at the Bombay University where the Arts degree course allows just one year of ELT and the Commerce and Science courses allow for none at all.

Decisions on ambitious courses of study are taken without sufficient discussion with teachers of various disciplines. Members of committees which are appointed for framing courses are unable to fathom the problems of ELT. Nor have they any means of judging the extent of the problem.

The length of time given to a language course is of the utmost importance. It is not possible to make a language course intensive beyond a certain point since the language-learning process is not at all similar to the process of learning concepts or of collecting and retaining information. A part of the process is unconscious assimilation which comes from exposure to the language over a period of time. Any degree of proficiency in the use of a language can be acquired only through careful and constant supervised practice in writing. Hence, cutting down the time and worsening the student-teacher ratio are bound to defeat ELT effort even with very good equipment.

Another important factor to be taken into account in framing a language course is the degree of mastery desired in the language. On this point there is no clear thinking at all; indeed, nobody even asks the question though, in academic circles, vague statements are made to the effect that students should master English sufficiently to be able to use it as a library language. No attempt is made to assess students' use of English as a library language.

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Some recent decisions to cut down the time for ELT have been motivated by a vaguely patriotic desire to encourage national languages. But while on the one hand there is a desire to give Indian languages their due place in education, on the other hand there is a desire to retain English as a medium of instruction because of its obvious practical advantages. This dichotomy results in dangerous experimentation and waste of resources and effort.

A sound ELT course at school, college and University level can be worked out only after a definite decision is taken on the place of English in India. If English is to continue as the medium of instruction at college and university level, or even as an important and necessary second language, is there enough provision in the courses for adequate teaching of the language? Even here, two different issues are involved. If it is to be the medium of instruction one kind of course is needed, and if it is to be a second language in which a high degree of proficiency is desired, another kind of course is needed. Either way, adequate time over the years has to be provided for ELT.

At present, the place given to English in the curricula of some universities smacks of experimentation. The Bombay University is a case in point; the Arts degree course requires students to take one paper in English only at the First Year. The paper called Communication Skills in English is supposed to make up for all short-comings of students in their command of the language and equip them to learn and answer examinations in all subjects of Arts, in English. And yet the paper is taught for only one year. The Science and commerce course students do not have the benefit of even one year's ELT.

The degree colleges receive the product of 10+2, to put them through the +3 stage. Teachers of all subjects struggle in the classrooms to put across to the students, various concepts in English. Officially, it is not even admitted that the 10+2 product is ill-equipped in English; hence remedial courses in English are not even contemplated.

Resources for ELT are scarce in the country as is

often pointed out. The Bombay University has perhaps the highest concentration of resources in the form of well-equipped teachers with adequate knowledge of the language. Ironically, the Bombay University has drastically reduced the time for ELT, thus making a huge waste of scarce resources.

The UGC has been granting several thousands for ELT programmes at universities. But while it is shelling out thousands of rupees for teacher-training and preparation of teaching material, it has not looked into the adequacy of the time allowed for ELT in the university courses. It has also not devised any method for assessing the results of the courses on the student's knowledge of English. This is another example of the wastage of national resources.

If a premier university like Bombay University has fallen prey to short-sighted political policies, it may not be long before other universities in the country follow its example.

We must decide once for all, what position the English language is to have in the country and in its educational programmes. The international language of science, commerce and scholarship cannot be lightly relegated to the position of a foreign language. But only after its position is agreed upon can we channelize the available resources to the required end, and prevent wastage.

The UGC can take the initiative in evolving a reasonable and tenable policy with regard to the place of English in the country's educational programmes. The UGC is, after all, the body responsible for ensuring that Indian universities maintain a level of proficiency and that the country has at least some universities which compare fairly with the best universities in the world.

Only when a reasonable decision is taken can educational institutions and universities begin to frame suitable courses. Otherwise, we shall continue with half-hearted decisions and hastily hatched courses for short-term results, using students as guinea-pigs for experimenting. The wastage is not only of men-power and money but also of the defective product turned out from the universities. □

Education for non-violence

(Continued from page 1308)

towards emphasising the spirit of competition and rivalry, rather than emphasising the value of co-operation. Of course, it is a tall order to expect that everybody will become hundred per cent rational and reasonable. But if your educational activities are geared to this basic task, along with the other things which I have emphasised the entire curriculum can then reflect not only rationalism, but also humanism.

What we find today is that these values are not reflected in our curriculum. On the contrary, we have prescribed a content of knowledge to be mastered within a given period of time. Only then I think that in our educational institutions we will be concerned with the really meaningful and great experiences of life, instead of merely memorising without experiencing, and developing exploitative competence without conscience. □

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Students advised to be self-disciplined

If you have to do well in this new world you must clearly see, first of all, what is happening around you. You must then find out why and how, where and when, all this is taking place that is changing the pattern of life of millions and billions of us all around this small globe of ours, so fundamentally. Only when you know all this you will be able to participate in this adventure and fulfil yourself. But only knowing what is happening is not enough. You must have capacity to live and work, grow and enjoy in this new world. If you do not acquire that capacity you will not be able to live in it. This world is only for the intelligent and the capable.

The dynamics of this new age, its vital energy, is Science and Technology. By the application of Science and Technology to satisfy

thousands of years was a closed one where all its component parts such as the smith, carpenter, potter, cobbler, builder, farmer, merchant, worker, were linked with each other by interdependent, mutually profitable relationships.

Now the new society, that is being born around us all over the world has a new and more exacting range of rules and regulations, disciplines and capacities the observance of which alone will enable it to function smoothly. The problems, frictions, stress, frustrations, wars, exploitation, horror, corruption, etc. that we see in many parts of the world including India are there because we do not see clearly what these new and more exacting rules, regulations, disciplines are of this new age and imagine that our old habits, and our former capacities

When goods and services (wealth) are limited the scope for greed is also limited. Even then we had made dictators who killed and pillaged and destroyed. Now thanks to science and technology we can have a vast range of goods and services and the greed of man has no limits, therefore, also his capacity to destroy. See what is happening to man in the big cities and what he is doing to rivers, oceans, forests, land all over the world in the name of "progress"! In this age of science and technology when every need of every person all over the world can be satisfied it is his greed that is making it more and more difficult to do so. Power protects greed and enables it to operate under the garb of Nationalism, Patriotism, etc. So you must master the secrets of science and technology to enable you to live in this world of speed, competition, excitement enjoyment and also of corruption, cruelty, exploitation. But above all you must individually master your own greed and become intelligent to see how conflicts and confusion arise in this new society which has a tremendous potential to usher in a new age of harmony and happiness. This is what is happening to all societies all the time when the citizens insist on taking out more and forget or neglect to return a little more than what they take out back to the society. If you remember to return more than you take out all the time, whatever your work and profession you will not go wrong. Do your best to give back to the society a little more than what you take out of it. Society will then be stable and happy. Do not say "It is my right to get this", say instead "It is my duty to do this for the society". Your rights follow your duties and not vice versa. Do not wait till the other person does his bit, do your's now and here, today.

In this tremendously exciting new world you have to be intelligent to survive and not be under any illusions. The first most common, and if I may say so an unnecessary illusion is, that the government or the Leader, the Prime Minister, or Dictator can give you what you desire. The

CAMPUS NEWS

his ever growing needs man has transformed his surroundings and in the process is transforming himself. Land, water, air, forests, the ocean, are yielding now their secrets to satisfy the basic needs of man, thanks to modern science. Technology is transforming these into various goods and services.

Now, each society has its rules, regulations, disciplines. Each expects certain capacities and duties efficiently performed by its citizens to keep itself growing. Thus, a tribal society expects of its citizens a certain range of duties and obligations before he or she is entitled to its benefits. The feudal society expected the master and servant, king and subject to perform certain specific duties so that they would be entitled to its protection and get the benefits. The village society in India for

that enabled us to function in a tribal, feudal, traditional system would do for this new one too. It is as if we try to operate an electrical pumping set on an old well with the skills and experience we have gained in driving a leather Mot drawn by bullocks!! or operate a tractor with experience and training of sitting in a bullock cart!! This new world of science and technology has a tremendous vitality and energy. You can make use of it for production of goods and services, for travel, enjoyment, adventure for acquiring new knowledge and for establishing a wide range of contacts with peoples of different race, creed, culture and temperament. Either we know the secrets of this vital energy and use it in a disciplined capable way or it will destroy us.

more you desire the more you expect the government to give you and depend on it. This is a purely feudal attitude. It was in those days when kings and queens ruled that you prayed for their indulgence and favours to live-like slaves? This dependance on the government is a hangover from the feudal times and is totally irrelevant to these modern times. Governments in this complicated, interrelated "one world" of ours can only perform marginal functions. Some of these are necessary, also important. But a government cannot function properly if the citizens are, ignorant, inefficient, lazy, superstitious, crude, angry, childish. The government is what you are. See around yourself and you will see only yourself reflected.

Only that discipline is creative and will lead to a stable society of contentment that is imposed by yourself. Discipline under orders of leaders, governments, etc. leads to dictatorship and misery. Auto-discipline starts from doing whatever work you undertake efficiently and intelligently. Auto-discipline is in your behaviour towards others in society. It is expressed in how you treat Nature around you, your love for the birds, the trees, the rivers, the forests. Auto-discipline is being really human and caring for others. If you are not intelligently efficient and discipline and acquire the power and vitality of this scientific technological age you will destroy yourself and the society in which you live.

In this tremendously exciting New Age you are going to face problems of unemployment, poverty, inequality, exploitation, corruption, boredom, violence, anger, hate, deceit. They are the hangover of an old dying system which cut up human beings into caste, creed, culture, and took pride in wars and destruction. This new age of science and technology with its tremendous energy and power will transform all social, economic, educational, political institutions of this old system. You must be intelligent, competent, and capable of shouldering your responsibility in this new

age. You must be intelligent to see first of all how this irresistible energy of science and technology unsettles the mind. The mind gets overstimulated, excited; then it is attracted by the very 'power' that this energy is. In all this the mind gets bewildered and exhausted. It gets proud, arrogant, angry, and violent—in fact unless you are intelligent this energy will destroy you. An angry, frustrated, violent, confused, arrogant mind will create confusion, tension everywhere and lead to destruction. You must, therefore, wake up to a new intelligence which can control this great energy. A mind can be intelligent only if it is not clouded by anger, hate, pride, ignorance. A mind that is clear, calm, compassionate, is an intelligent mind. Without this intelligent mind, without this intelligence of compassion, you cannot control this vast energy and vitality of this new age of science and technology.

In this age of science and technology, when 'you' are interconnected with everyone else in the world through commerce, industry, knowledge, culture, when new inventions like telecommunication, air-travel, transistors, television are bringing ideas and ways of behaviour, music, sports, literature, drama in your living room, how can you be only a Hindu, or a Christian, a Muslim or a Buddhist or black, brown, white, yellow? How can you only be an Indian or a Pakistani? Be intelligent and compassionate and see, feel that you are what you are and all the others together. Your "I"-identity and is worldwide, universal, as without the world "you" cannot survive. If you see, feel this clearly you can awaken yourself with a new "I"-identity and a new competence to live in this new world. This question of "I"-identity has created chaos in this world. Just because through ignorance and illusion "you" have considered yourself totally separate and distinct from the "other", you have feared, hated, exploited, murdered the "other". Now science and technology has made "you" interconnected and interdependent on the "other" whether he is

brown, black, white, yellow, or a muslim, harijan, brahmin, or jew. How can your "I"-identity be the same now? Do you see this clearly? If you do, all this hate and murder of exploitation and wars will be banished for ever from your mind. If you persist in this ignorance and illusion you will continue to kill and be killed, and you will be miserable.

If only one in a thousand awakens himself to this intelligence and compassion, the "new world" will come into existence more easily and quickly. The new world will be born in any case. But the misery and suffering before it starts functioning fully can be lessened, mitigated, if you are intelligent, compassionate, competent, and fully responsible for your own actions. They say, even one in one hundred thousand, if he is enlightened, can help in this transformation.

It is an exciting but a hard adventure. When you start on this path your steps will falter to begin with. But soon the joy of the Endless Journey will be your constant companion. Therefore, arise, wake up, be aware, of the higher destiny that awaits you.

(Excerpts from the Convocation Address delivered by Dr. Apa B. Pant at Shivaji University, Kolhapur.)

Educational tours for J & K students

The state government has decided that ten percent college students of final year classes in Jammu & Kashmir Universities should participate in educational tours. In addition, ten percent students with outstanding sports and extra-curricular activities will also be selected for the tours. The touring students from each division of the state selected separately would travel in batches of fifty boys and girls and will receive return railway fare. Tours will last for not more than ten days and will be confined to places of historical, cultural, educational and technical interest. The expenditure on sight-seeing will also be borne by the government.

Annamalal Varsity Golden Jubilee

Dr. B.S. Somasundaram, Vice-Chancellor of Annamalai University said in Annamalainagar that the university will celebrate its golden jubilee next year during March/April. He said the University Grants Commission had provided a grant of Rs sixty lakhs for development of the university's engineering departments. The Ministry of Education had also sanctioned Rs. ten lakhs for developing the engineering colleges of the university. The Vice-Chancellor said that he had explained the financial requirements of the university to the state Chief Minister recently and expected a favourable decision for enhanced funds for development.

Madras Varsity plans new courses

The Syndicate of Madras University at its recent meeting decided to introduce M. Phil. course in Andrology in the department of adult education of the University. This is the first time that the discipline is being introduced at university level.

The institution of a postgraduate diploma in production management and a degree of master of engineering (urban engineering) in place of M.Sc. urban engineering was also approved. The University Senate decided to change the nomenclature of degrees of bachelor and master of library science the bachelor and master degree of library and information science. The regulations permitting the blind candidates to appear privately in a number of examinations not involving practical or project work were revised at the meeting. Working librarians and demonstrators have been allowed to appear privately in certain examinations in their respective fields. The Syndicate modified the provision for evening college students to allow them to take two additional papers at the undergraduate and postgraduate level in lieu of community and social services or to complete CSS oriented projects.

Dr. G. R. Damodaran, Vice-Chancellor of the University said

that the Syndicate had appointed a sub-committee to study the new Tamil script recommended by the state government. The committee would go into the implications of the new script, its methodology and techniques and submit its report within six months. A special cell with a tamil scholar has been sanctioned to provide in tamil all the records, reports and minutes of the meetings of various authorities of the University.

World conference on correspondence education

Shri B.D. Jatti, Vice-President of India while inaugurating the eleventh world conference of International Council for Correspondence Education in New Delhi called for new strategies to make education reach the people and transform universities into institutions of mass enlightenment. The Vice-President said the growing demand for education particularly in developing countries posed a challenge before the educational planners to formulate a new policy to reach the people. The educational system which served the needs of limited number mostly from elite classes cannot obviously meet the needs of the millions seeking education. Mr. Jatti observed that correspondence education in vogue in Germany during the last hundred years had stood the test of the time and established its efficiency. The system was of particular relevance to developing countries, where it had proved its effectiveness even under constraints like shortage of teachers, buildings and equipment.

Dr. David M. Young, the President of the Council said the correspondence system was an excellent way of teaching and learning. It was economical and easily adaptable.

The conference highlighted the development of correspondence education as an international concern and shared insights on some important problems such as editing, testing, publishing pricing and marketing of teaching material and students counsel-

Madras Varsity institutes Chairs in Punjabi & Gujarati

The Madras University proposes to institute Chairs in Punjabi and Gujarati from the next academic session. The Tamil Nadu Government has sanctioned an annual grant of Rs forty six thousand each for the programme.

The Punjab and Gujarat state governments are also planning to institute chairs in Tamil in the state universities.

ling. It also discussed effective ways to train correspondence courses teachers and explored possibilities of increasing cooperation between UNESCO and the Council. Special sessions on regional problems were held in addition to general sessions on various aspects of correspondence education. Two sessions were devoted exclusively to the development of correspondence courses in India. Dr. Satish Chandra, Chairman of the University Grants Commission, Dr. Amrik Singh, Vice-Chancellor of Punjabi University, Dr. Otto Petters, Vice-Chancellor of Fernuniversitat (Germany), Dr. John S. Deniel, Athabasca University (Canada), Dr. Homer Kemfer, Continuing Education Council (USA), Prof. Bakhshish Singh, Punjabi University, Dr. Hafiz Wali, Ministry of Education, Nigeria, Dr. Naomi McIntosh, Open University (UK), Mr. Michael Carbery (USA), Mr. Kevin C. Smith (Australia), Mr. Robert Wentworth (USA) and Mr. N.O. Kabawasa (UNESCO) were among the eminent scholars who chaired some of the conference sessions.

Prof. Bakhshish Singh, Director of the Correspondence Courses at Punjabi University was elected as President of the Council for three years.

About one hundred sixty delegates from forty countries participated in the Conference. It was decided to hold the next Council meeting at the University of British Columbia, Canada.

Calcutta symposium on geophysics

Dr. C.S. Pichamuthu, President of the Geological Survey of India in his inaugural address at the national symposium on exploration of geophysics held recently in Calcutta said that science of geophysics would reveal mysteries of earth by correlating itself with findings of geology. Sophisticated measurements of earth when interpreted in terms of geology would lead to meaningful results in structural control and location of mineral deposits.

Dr. V.S. Krishnaswamy, Director General of the Geological Survey of India said that the emotional bond between geophysics and geology would not last if it was not made stronger by linking them to other disciplines. He stressed the study of earth in totality. He said resources of the science were utilised to discover most of the country's oil fields and the Survey had directed their potentials to explore base metal deposits in the country after establishment of oil and natural gas commission.

Madras Varsity teachers organise social work camp

About fifty teachers of Madras University undergoing an orientation course for NSS programme officers at the University School of Social Work organised a rural camp at Karlapakkam village in the Villivakkam Panchayat Union recently. The teachers including fifteen women teachers evoked lively interest among the villagers when they moved to clean the village to imbibe a lesson of environmental sanitation. The villagers also joined the teachers in cleaning the campus of the Panchayat school where a playground and a kitchen garden were laid. The school children were taught the elementary lessons in health, hygiene, citizenship through simple methods. The women teachers of the camp devoted a major part of their time in imparting training to the women folk of the area in child care, family planning, nutrition, sanitation and health. The village women were also taught to conduct the

affairs of the local Sangam. The teachers went round the villages and spoke to the elders on the need for economising expenditure on functions and generate savings. A medical check-up of the villagers, conducted with the cooperation of the primary health centre enabled the identification of sick persons who were supplied free medicines.

Roorkee Varsity students' plan exploration of Himalayas

Some of the adventurous students constituting the Himalayan Explorers' Club of Roorkee University are participating in a training programme in mountaineering to face the rigorous climatic conditions of Himalayas. They are planning to develop a technology for setting up plant nurseries at the highest habitations of the Himalayas. The students have constituted themselves in two sections—the High Adventure Centre and the Regional Development Centre. The Adventure Centre has completed successfully four expeditions. The latest expedition which included twenty four undergraduates of the university without any assistance from sherpas sent up a summit party of five atop Mt. Friendship (17,353 ft) and Hanuman Tibba (19,430 ft). The students carried preliminary testing of high altitude power generation unit developed by them with the help of teacher. The club is now planning for another expedition, next summers, when they will make an attempt on the gaumukh region of the Garhwal Himalayas.

The Development Centre of the club is planning for development of eco-technology for the balanced socio-economic development of different regions. The Centre has completed a number of controlled environment projects and techniques. It has also set up a complete laboratory and devised its gadgets designated as Himatron, Nanda Ture, Propotron, Ice-dyne and Phytotimer. A field station has been established on the university campus with automatically controlled watering system for test beds to investigate responses

of exotic flora under environmental conditions. The state council of science and technology have given a grant of Rs fifty thousand to the centre. The council has also instituted scholarships for students participating in the regional development projects.

History of Mathematics

Dr. S.G. Deo, Professor of Mathematics at the centre of post-graduate instruction and research of Bombay University said the history of mathematics in India dates back much before the Mohenjo-Daro civilisation. Mathematics reached the western world much later through the Arabs. He explained the history of mathematics in his paper presented recently at the second world Hindu conference held at Prayag. Dr. Deo said the earliest reference to the subject were found in the literature of Hindus and even in Valmiki's Ramayana nearly 1000 BC. Ganita, the science of calculation had occupied the highest position of honour in the society. Teaching of arithmetic (Ganana) and geometry (rupa) were considered inevitable in the early age.

NCC celebrates thirtieth anniversary

President, Shri N. Sanjiva Reddy has said in his message on the 30th anniversary of the National Cadet Corps that NCC would continue to play a leading role in channelising the energies of youth for nation building activities.

The Prime Minister, Shri Morarji Desai in his message said that the National Cadet Corps seeks to develop in the youth a sense of discipline, build their character and offer them opportunities for collective service of the country. He asked the NCC units to utilise the opportunity during vacations for improvement of the living conditions of people in the rural areas.

Defence Minister, Shri Jagjivan Ram said in his message that NCC has now emerged as the premier youth organisation and is contributing to the qualities of leadership, character and sportsmanship in our youth. The NCC curricu-

lum has been improved to make it more interesting. He said the dedication and hard work on the part of the officers and cadets will contribute in a greater measure to the task of nation building.

South Gujarat continuing education programme

The Department of Education of South Gujarat University, Surat plans to organise the following courses under the continuing education programme:

- Healthy living for slum-dwellers
- Course for bus conductors
- Course for traffic rules
- Course for librarians
- Course on new mathematics for guardians
- Course on teaching skills for Primary schools teachers
- Course on child development for guardians

The Department proposes to cover a broader range of programmes from the next academic session. The courses are proposed to be organised without any financial assistance from the University Grants Commission or any other agency. The attempt of the department is to work out a model to organise such programmes on self-financing basis. The Department invites suggestions for improvement of the scheme.

Mysore University plans new courses

The Academic Council of Mysore University at its recent meeting approved the establishment of an Institute of Genetics and Centre for wild life studies. The Council decided to institute the following courses of studies in the University: post-M.Sc. diploma (applied electronics), B.Sc., M.Sc. (wild life management), diploma course in painting, diploma courses in Tamil, Telugu and Malayalam, post-S.S.L.C. diploma in Urdu, post-P.U.C. diploma in Persian and Arabic, B.A. (comparative religion), M.A. (psychology), M.A. (co-operation) B.A. (folklore), M.A. (criminology), B.S.Ed., B. Arch (circuit analysis), M.Phil of one-year duration.

The council decided to admit any graduate to the M.A. (Jour-

nalism) if he qualified in the written test and interview. Diploma holders in journalism will now be allowed to join M.A. (journalism) without any test or interview. Candidates who have passed the vidwat examination of Karnataka Board of Sanskrit Education and the post-PUC diploma in Sanskrit will now be qualified for admission to M.A. Sanskrit. The Council approved to admit candidates who have passed B.Sc. with human nutrition and human development to M.Sc. (home-science—foods and nutrition) provided they had studied chemistry. The Department of Library Science has been designated as Department of Library and Information Science.

Kurukshetra Varsity organises community programme

The NSS Unit of Kurukshetra University organised 'an Evening with community' in the campus recently with members of the adjoining villages, adopted by the university, participating in the programme. About three hundred villagers including about a hundred women were welcomed by the Pro-Vice-Chancellor, Prof. R.D. Sharma. The get-together provided the villagers an opportunity to see the educational and physical facilities available for their wards studying in the university and suggest improvement in the various schemes. They were deeply impressed with the campus life. The faculty members, the students and other staff of the university joined in a cultural programme organised in the evening.

Dr. Vikas Mishra, Vice-Chancellor of the University presided over the function.

Rajasthan Varsity College Development Council inaugurated

Prof. Satish Chandra, Chairman of University Grants Commission while inaugurating the first meeting of College Development Council of Rajasthan University in Jaipur recently said the drastic cut in the plan grants had made it difficult for the Commis-

sion to find money to support even the standard colleges. The tendency to start new colleges without assessing their needs or without making proper survey of their requirements had disastrous effects and should be stopped. He said the College Development Council had to play an effective role of coordination between the university, government and the colleges in order to foster academic interaction in a meaningful way.

Shri Ved Pal Tiagi, Vice-Chancellor of the university in his welcome address said that unless there was an appropriate formal organisation to specifically look into the problems of academic growth and development, scattered colleges tend to be isolated and resources got unevenly distributed. He said the Council shall play an effective role of coordination in this context.

Shri L. P. Vaish, Co-ordinator of the Council pointed out that the objective of the Council could not be achieved by holding a couple of meetings. He pleaded for a mission oriented and time bound programme. He said the UGC Visiting Committees should have a special responsibility of making an assessment of various needs of affiliated colleges to be presented through the Council.

Call for re-integration of Indian culture

Shri Morarji Desai, Prime Minister and Acharya of Visva Bharati University while addressing the annual convocation of the University said that the Centre was in the process of exploring new avenues to reorient the country's education system in light of ideals of Rabindranath Tagore and Mahatma Gandhi. He said education was one of the most powerful instruments of developing human personality. Education ought to give us self-confidence and freedom from frustration. The Prime Minister said that education should teach everybody to lead an independent life so that he did not become a liability to the society. It should aim at achieving a spirit of oneness. Shri Morarji Desai said we have been handed over an education

system which was foreign in conception and was designed to lose our personality. The need for a change in education and to conform it with our ideals had been acknowledged. The Prime Minister said that the Vice-Chancellors and University Grants Commission were also planning to work out a scheme for reorientation of the system.

PM advises sportsmen to practise discipline

Prime Minister, Shri Morarji Desai while addressing members of the Contingent for Bangkok Asian Games advised them to practise discipline, forbearance and abstain from evils which might affect their performance in the field. He said winning or losing was not as important but it was necessary that the sportsmen behaved on the field in an exemplary manner to hold prestige of the country. He said sports and games were an integrated part of human personality and no man was complete without them. He urged the sportsmen to give a fine example of sportsmanship in Bangkok.

Discovery of Raman Effect

Prof. R. S. Krishnan of Indian Institute of Science while delivering the K.S. Krishnan Memorial Lecture at National Physical Laboratory in Delhi said that Dr. C.V. Raman had made the Nobel Prize winning discovery with equipment whose total cost did not exceed Rs. two hundred. Dr. Raman's apparatus consisted of a mirror, a lens, a pair of glass filters, a flask containing benzene and a pocket spectroscope. The discovery was a result of seven years of sustained and systematic work by Dr. Raman and his devoted students. The achievement is creditable considering that scientific research was not liberally supported by government in those days. Dr. Krishnan said the history of discovery of Raman Effect showed that it was the calibre of the scientist that matters for scientific progress and not the provision of costly equipment.

Referring to the controversy over Dr Raman's discovery whose golden jubilee is being celebrated this year, Prof. Krishnan said although Russians and Germans had not recognised the discovery for many years, there is no controversy now. Twenty thousand scientific papers have so far been published on Raman Effect and its applications to different branches of science. Raman Effect has made available an elegant technique for studying the molecular structure of matter by scattering of light. With the advent of laser as a powerful source of light the application of Raman Effect has spread to other fields such as biology, polymer science, biochemistry and medicine. Prof. Krishnan said the development of powerful tunable lasers may eventually lead to another revolution in the history of Raman Effect.

Study on drop-outs in rural areas

The Indian Institute of Education in Pune proposes to undertake a systematic and in-depth study on the educational problems of the rural areas and suggest means to put an end to the increasing number of drop-outs from various sections of society. The Institute will set-up five units in Pune district at the initial stage, each covering a population of about thirty thousand. The units will cover slum areas in the city, small farmers, adivasis and other economically backward people from drought-prone areas and affluent sections in the irrigated zone. The Institute also proposes to establish five shadow units to study similar problems faced by similar groups in other areas of the country.

Prof. D.A. Dabholkar of the Institute said they expected to evolve a programme that would cover children from 6-14 age group from which thirty-three percent dropped out in the primary education stage. He said the resources for the project were expected to come from the Union Ministry of Education and UNICEF.

Technology for rural areas

Dr. P. C. Chunder, Union Education Minister while delivering the convocation address at the University of Roorkee said competition between different levels of technology could be eliminated by reserving certain areas of production exclusively for rural technology. This will eliminate the need for subsidies and competition will be confined to the same technology. He suggested that the areas of reservation should be carefully selected taking into account the scope and limitations of the process, the marketability of the products and the sector of the society to whom it served. Dr. Chunder observed that different levels of technology would have to co-exist to ensure their complimentary nature. One of the main problems facing the country at present was that of low and inadequate income and widespread unemployment and underemployment. The past efforts while benefitting a small section of the population had left the rural people untouched. He said while the number of people living below the poverty line had not declined, unemployment has increased both in absolute terms and as a proportion to the working population. He felt that industrialization since independence had mainly benefited the urban population.

Dr. Chunder referred to the widening gap between the rural and urban standards of living and suggested correctives in the form of technology transfer and development of appropriate technology for rural development and slum clearance. Although the technology transfer to the rural areas had been the subject of planning process, the goals were still to be achieved. He therefore reiterated the need for transfer of appropriate technology to the rural areas to find their solutions. He said unemployment could not be solved by setting up sophisticated industries as the capital resources required for such undertakings could be staggering. He pleaded for development of small-scale and cottage industries using local

technology. These industries would also be supplementary to agriculture and would assist each other.

UNESCO assistance for geophysics progress

While inaugurating the first regional course on methods and techniques in exploration geophysics at the Centre of Exploration Geophysics, Osmania University, Dr. V. G. Podoinistsin, Regional Director at UNESCO said that assistance for research programmes on geodynamics aiming at an elucidation of geophysical, petrochemical structure of the lower crusts would be available. He said the expert groups will undertake studies pertaining to the improvement of systems for the collection, analysis and international exchange of earth science data. The action needed for access to such data and technical capacity to make full use of it would also be studied. Special studies would be made of the potentialities and problems involved in the analysis of data obtained by remote sensing and their actual use by developing countries in the assessment of natural resources and environments. These studies are expected to provide the basis for subsequent assistance for handling such data in accordance with their particular needs. Dr. Podoinistsin called for a greater international cooperation in economics, science and technology. He said such cooperation would be helpful in finding joint solution to problems like the extraction of mineral resources, coordination of prospecting and surveying programmes, drilling methods and the analysis of complex ores. The economic integration, if achieved could lead to proper division of efforts between nations in scientific research and in the extraction and processing of minerals and fuels. He said demand for renewable and non-renewable sources was growing rapidly and accurate knowledge of the resources had become imperative to plan the development of countries.

Dr. A. Roy, Director of the National Geophysical Research Institute and Prof. V. L. S.

Bhimasankaram, Director of the Centre of Exploration Geophysics at the University explained salient features of the course.

Speciality boards to conduct medical examinations

Dr. P. N. Chhuttani, Chairman of the National Academy of Medical Sciences said in Ludhiana that the Academy had set up thirty-five special boards to conduct national examinations in higher specialities in medical science. He said this was a combined effort of the Academy and the government. Dr. Chhuttani said that the objectives of the Academy included recognition of merit and encouragement to scientific efforts in the field of medical science.

Restructuring educational planning

Shri B. Krishna, Parliamentary Secretary to the Union Education Ministry while addressing the Students Information Centre meeting held recently at Hyderabad stressed the need to re-structure educational system to cater to the needs of society. He referred to the increasing demand for civil engineers as against mechanical and electrical engineers and said that proper planning could avoid such wastage of resources. He emphasised the need to fill the communication gap between the students and the authorities and teachers and taught. He complimented the Centre for making efforts towards this goal. He called upon the students to strive to bring about constructive changes without resorting to violence and channelise their energies for uplift of the society.

Aligarh students constitute Relief Committee

The students of Aligarh Muslim University have formed a Relief and Rehabilitation Committee with constituents drawn from the various associations and unions functioning in the University. The Committee has collected a sum of Rs 1.80 lakhs for the relief work. The Committee is functioning in all the affected areas in the town without any reservation and has

helped the affected persons through cash and kind. Medical aid and medicines have also been provided by the Committee. The Committee in collaboration with the Aligarh Rahat Committee distributed Diwali gifts to the victims of the riot affected areas. The Committee surveyed the affected areas of the city to assess the loss suffered by the various persons proposed to be compensated.

Promotion of sports

Shri C. Aranganayagam, Tamil Nadu Education Minister while inaugurating the state level seminar on physical education held at Women's Christian College in Madras called on the physical educationists to remove the wrong notion of society that by participation in sports students neglected their academic career. The society should be made to realise that sports and games were integrated part of human personality. He said government was exploring the possibility of starting sports schools in the state and will continue its efforts to encourage physical education. He said it was for the physical educationists to create the right atmosphere among the youngsters.

Prof. P. Sivalingam, Vice-Chancellor of Perarignar Anna University of Technology said it was a sad spectacle to witness poor standards in sports despite efforts made by all concerned to improve it.

Need for integrated approach to rural programmes

Dr. D.T. Lakdawala, Deputy Chairman of the Planning Commission while inaugurating the All-India Workshop on Dynamics of rural transformation at the Madras Institute of Development Studies said that the country had reached a stage when future transformation in agriculture and industry had to be achieved in such a way that the two sectors developed in harmony with each other. He said past experience had shown that there was greater need for regeneration of rural

economy since the progress in the industrial sector had not helped to tackle the problems of poverty and unemployment. The industrial sector was capital-oriented and intended to dispense with labour. This type of economic development could not be self-sustaining. Dr. Lakdawala said despite the emphasis on rural regeneration the growth of rural economy was expected to be four percent as against seven per cent of the industrial sector. It was therefore necessary to study the combination of circumstances that had led to this situation and also the remedial measures. Dr. Lakdawala emphasised the need for integrated approach to rural problems and a change in the attitude of people tackling them.

Financial aid for sportsmen in Punjab

Veteran international sportsmen/sportswomen of Punjab who have represented in the national team in Olympic Games, World cup tournament, Cricket test, Davis cup, Commonwealth games and Asian games will be eligible for financial aid ranging from Rs. 150 to Rs. 200 per month. The income of such sportsmen should not exceed Rs. five thousand and they must have attained the age of sixty years. The sportsmen who participate in olympic games, world competition, cricket test and Davis cup will receive Rs. 200 and others Rs. 150 month.

Government to review decision on Asian games

Dr. P.C. Chunder, Union Education Minister informed the Rajay Sabha that the government was reconsidering the question of hosting the 1982 Asian Games in India. He said the matter was being examined from the financial angle and the decision would be taken shortly. The Cabinet had earlier decided against holding the Asian Games in view of the heavy expenditure. The estimated expenditure varied between Rs 20 crores to Rs 30 crores. The previous commitment was based on the expenditure of Rs 10

crores. The expenditure has now been estimated at Rs 26 crores. This would go up by Rs. 9 crores if huts were to be constructed to provide accommodation to the participants.

Punjabi Varsity constitutes Panel on medium of instruction

Dr. Amrik Singh, Vice-Chancellor of Punjabi University said in Patiala recently that the university had set up a three-member committee headed by Dr. M. S. Randhawa to review the progress of development of Punjabi language. The committee will suggest ways and means for progress of the language and assess how far the university had been successful in introducing Punjabi as medium of instruction. It will suggest the nature of relationship between the university, the government and semi-government organisations engaged in development of the language. The role the university in introducing new schemes of publishing a newspaper, sale of general books and setting up of people's libraries for promotion of the language will also be studied by the Committee.

Plea for university course on legal aid

The All-India seminar on 'free legal aid' held recently in New Delhi under the auspices of Indian Council of Legal Aid and Advice has recommended the introduction of a two-year university course in legal aid, internship in clinical knowledge and experience. The seminar recommended that preference should be given by way of inducement to young lawyers to do legal aid work. The lawyers who had done legal aid work should be preferred for appointment to judicial posts.

The seminar was attended by the law-ministers of nine states, judges of the supreme court and high courts and academicians from all over the country.

Faculty Improvement Programme

The Indian Institute of Technology, New Delhi, has invited ap-

plications from college teachers for M.Tech/M.E./Ph.D. Programmes under the Quality Improvement Programme sponsored by the Union Ministry of Education. The facilities for study will be available at the five IITs, Roorkee University, Jadavpur University, Indian School of Mines and certain other regional engineering colleges. Teachers holding M.Tech/M.E. Bachelor's degree with three years teaching experience are eligible. The applications on prescribed forms will be entertained by the Co-ordinator, Q.I.P., of the Institute by 20th January, 1979.

IIT develops nucleonic machine

The Indian Institute of Technology at Bombay has developed a nucleonic weighing machine for uninterrupted weighing of materials carried through conveyor belts in various industries. The present process of weighing in batches is time consuming as interruption takes place in movement of materials. The machine consists of line radiation source emanating from the material moving on the conveyor belt which gives signals showing the weight of the material. These signals are processed and projected in an electronic display unit to indicate the rate of loading and integrated load. The Atomic Energy Department has given confirmation the accuracy of the machine.

PERSONAL

1. Shri Uma Charan Ghildyal has been appointed Vice-Chancellor of Garhwal University.

2. Dr. S.D. Sinval has been appointed Vice-Chancellor of Kumaun University.

3. Shri Anwar Jamal Kidwai has taken over as Vice-Chancellor of Jamia Millia Islamia.

4. Dr. K.R. Narayanan has been appointed Vice-Chancellor of Jawaharlal Nehru University.

A list of Doctoral Theses Accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Balaprasad, Vallurupalli. Secondary flow in rotating channels with porous walls. Andhra University.
2. Chandra Mohan, I. Some applications of differential geometry to mechanics and conducting flows. Sri Venkateswara University.
3. Hiremath, P.S. Some problems in Newtonian and Non-Newtonian flows. Karnatak University.
4. Patel, Kantibhai Chhaganbhai. On some problems of porous metal lubrication. Sardar Patel University.
5. Trivedi, Virendra Kumar. An integral equation approach to some problems in heat transfer. University of Delhi.

Statistics

1. Nair, K.N.S. Some aspects of multicollinearity in single equation models. Indian Institute of Technology, Kanpur.

Physics

1. Bhatia, Gopal. Characteristics of carbon mixes. University of Delhi.
2. Brahmaji Rao, Vasantha Rao. Influence of dielectric constant on the activity coefficient, conductance of compressibility of electrolytic solutions: Ion pair formation. Andhra University.
3. De, Udayan. Studies on transport and other related properties of gases. University of Calcutta.
4. Deshmukh, Ravindra Sheshrao. Studies in disordered systems: Amorphous silicon semiconductor: Electrical and optical properties of hydrogenated amorphous silicon. Marathwada University.
5. Jain, Sushil Kumar. Measurement and analysis of Hall effect and magnetoresistance in the two band model for n-and p-type gallium antimonide semiconducting system. University of Delhi.
6. Kalra, Saroj Bala. Fluctuation-enhanced electrical conductivity of thin superconducting films of tin. University of Delhi.
7. Lakshmana Das. Nadukuru. Studies on the pre-equilibrium contribution in neutron induced reactions at 14 MeV. Andhra University.
8. Maiti, Narupam. Studies on ion-atom, electron-atom and electron-ion collisions. University of Calcutta.
9. Raghavendra Rao, C.S. The outer Van Allen radiation belt and auroral substorms. University of Delhi.
10. Sarode, Prabhakar Raoji. X-ray spectroscopic study of some cobalt rare-earth intermetallic compounds. Nagpur University.
11. Sinha, Madhusudan Prasad. Studies on the heat capacity and magnetic anisotropy of some hydrated magnetic complexes around their structural phase transition points. Indian Institute of Technology, Kharagpur.

Chemistry

1. Anantharamaiah, G.M. Synthesis of peptides of biological interest. Bangalore University.
2. Baligidad, S.K. Synthesis of peptides of biological interest; Peptides related to C-terminal end of human fibrinopeptide A and peptides related to physalaemin. Bangalore University.
3. Bhatt, S.B. Studies on optical activity. Saurashtra University.
4. Datta, Manik Chandra. Studies on homogeneous catalysis: Reduction of nitrobenzene by di-hydrogen. Indian Institute of Technology, Kharagpur.
5. Gupta, Manohar Lal. Physico-chemical studies of some metal complexes of Schiff's bases. Jiwaji University.
6. Himanshu Mohan. Chemical investigation of active constituents of some medicinal plants of Nainital. Kumaun University.
7. Joshi, P.C. Synthesis and screening of some fungicides. Kumaun University.

8. Kaul, Bharat Bushan. Studies on some transition metal dithiocarbamates and dithiocarbazates. University of Delhi.

9. Kesavan, Shanthi. Analytical applications of 2-semicarbazone and 2-thiosemicarbazone of 1, 2-naphthoquinone-4-sulphonic acid (sodium salts). University of Delhi.

10. Mahana, Tulsi Das. Studies on metal chelates. Sambalpur University.

11. Manoharjit Kaur. Some photochemical reactions and chemical synthesis. Kurukshetra University.

12. Melkani, Lata. Studies in some aspects of abiogenesis of biomolecules. Kumaun University.

13. Pandya, K.S. Studies on several synthetic and natural drug potentials. Saurashtra University.

14. Pant, Uma Rani. Molecular properties of some diatoms. Kumaun University.

15. Pathak, Satish Kumar. Studies on purification and chemical characterization of respiratory allergens. Kanpur University.

16. Prasad, Shree Ram. Cryomagnetic and spectral studies of transition metal complexes. Indian Institute of Technology, Kharagpur.

17. Sharma, Damayanti. Steady-state radiolysis of the hexacyanoferrate (II & III) and octacyanomolybdate (IV) ions in aqueous solutions. University of Delhi.

18. Sharma, Vinod Kumar. Studies in the cation exchange behaviour of metal ions of first transition series in aqueous propanol. Jiwaji University.

19. Singh, Krishna Chandra. Potentiometric studies on some electrolytes in mixed solvents. Utkal University.

20. Verma, Karan Singh. Chemistry of new iridoid glucosides and chromone glycosides from *Tecomella undulata*. University of Delhi.

Earth Sciences

1. Rajurkar, Suresh Trimbak. Structure and correlation of the upper Cuddapah strata in the northern part of Cuddapah Basin, Andhra Pradesh. Nagpur University.
2. Veerayya, Muthavarapu. Studies on the geological aspects of the beaches of Goa in relation to some meteorological and physical oceanographic factors. Andhra University.

Engineering & Technology

1. Chakraborty, Madhusudan. Studies and control of properties and behaviour of various sand systems used for metal casting by application of statistical design of experiments. Indian Institute of Technology, Kharagpur.
2. Mehra, D.K. Identification and equalization of fading dispersive channels. Indian Institute of Technology, Kanpur.
3. Pal, Sitangsu Sekhar. Studies on vertical two phase co-current flow with improved gas-liquid mixing. Indian Institute of Technology, Kharagpur.
4. Rama Krishna Rao, P. Certain generalizations of permutation-invariant systems. Indian Institute of Technology, Kanpur.
5. Surayya, K. Limit analysis of reinforced concrete cylindrical shell roofs. Indian Institute of Technology, Kanpur.

BIOLOGICAL SCIENCES

Biology

1. Mukhopadhyay, Rita. Effect of gamma rays on the interaction of DNA and DNP with carcinogens and anticarcinogens. Jawaharlal Nehru University.

Botany

1. Arora, Rewa. Post harvest decay control of Citrus fruits. Kanpur University.
2. Chowdhury, Sudhangshu. Certain aspects of chemotaxonomy of amaranthaceae and chenopodiaceae. University of Gauhati.
3. Jain, Ashok Kumar. Study of the vegetation of certain areas of Chambal Ravines. Jiwaji University.

4. Jain, Shri Mohan. In vitro production of haploids in higher plants. Jawaharlal Nehru University.
5. Janaki, S. Studies on the regulation of nitrate reductase in *Spirodela oligorrhiza* and excised leaves of wheat, *Triticum aestivum*. Jawaharlal Nehru University.
6. Joshi, K.K. Cytogenetical studies in the genus *Linum* L. and its allies. Karnatak University.
7. Mohanty, Ratnakar. Metabolic studies on some members of the Gymnoascaceae. Utkal University.
8. Prithpal Kaur. Control of helminthosporiose of rice through soil amelioration. Utkal University. Zoology
1. Goswami, Binaykumar. Studies on the functional morphology of the cranial muscles of some common Indian cyprinid fishes. University of Calcutta.
2. Goyal, Asha. Studies on the skeleto-muscular system of the common Indian ant, *Camponotus compressus* Fabr. and bionomics of some ants from Delhi. University of Delhi.
3. Janaiah, C. Studies on the scent glands of two pentatomid bugs; *Tessaratoma javanica* Thunberg and *Chrysocoris purpureus* Westw. Kakatiya University.
4. Jayashree, C. Studies on some effects of alloxan diabetes on the central nervous system in rats. Bangalore University.
5. Kameswari, M. Studies on some biochemical and physiological aspects of host-parasite relationship in *Rana tigrina* and *Calotes versicolor* with reference to helminth infection. Kakatiya University.
6. Nimavat, D.M. Biological and biochemical studies of some edible oysters of Saurashtra Coast. Saurashtra University.
7. Pal, Anadinath Nagendranath. Studies on the male accessory reproductive organs in some Indian bats. Nagpur University.
8. Sharma, Radheshyam Murlidhar. Studies on taxonomy of gall midges (Itonididae: Diptera) from Marathwada. Marathwada University.

9. Sidhra, Dharam Vir. Studies on anatomy, histology and histochemistry of some internal systems in the meloid beetle, *Mylabris pustulata* (Thunb) (Meloidae: Coleoptera). Nagpur University.

10. Singh, Indira. Studies on the nervous system of aestivating *Pila globosa*. Bangalore University.

11. Tagade, Ambadas Maroti. Studies on helminth parasites of vertebrates especially nematodes from Maharashtra. Marathwada University.

12. Venkatesh Naidu, T. Suresh. Studies on the nematode parasites of vertebrates of Vidarbha Region. Nagpur University.

Medical Sciences

1. Maiti, Tapas Kumar. Internal absorption of different penicillins, streptomycin and nitrofurantoin in vitro and related phenomena. University of Calcutta.

Agriculture

1. Dwivedi, Rishi Muni. Fertilizer studies in roses. Kanpur University.

2. Mohite, Adhikrao Vishnu. Studies on the problematic soils from Tujarpur of Sangli District. Mahatma Phule Krishi Vidyapeeth.

3. Shri Ram. Study of income, savings and investment in agriculture in district Kanpur, U.P. Kanpur University.

4. Singh, Ram Pratap. Biology and parasitism of *Bhizoctonia* sp. associated with linseed (*Linum usitatissimum* L) roots. Kanpur University.

5. Tewari, Vachspati. Studies on compatibility and interaction of pesticides with selected *Bhizobium* spp. Kanpur University.

6. Trehan, Kul Bhushan. Gene effects and heterosis in certain quantitative characters including yield in sesamum *Sesamum indicum* L. University of Udaipur.

7. Verma, Harpal Singh. Genetic analysis of yield and its components in table pea, *Pisum sativum* L. Kanpur University.

Additions to AIU Library

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- Cronbach, Lee J. and Snow, Richard E. *Aptitudes and instructional methods: A handbook for research on interactions*. New York, Irvington (c 1977) xviii, 574p.

- Entwisle, Doris R. and Hayduk, Leslie Alec. *Too great expectations: The academic outlook of young children*. Baltimore, Hopkins University Press (c 1978) xiv, 193p.

- Fraenkel, Jack R. *How to teach about values: An analytic approach*. New Jersey, Prentice-Hall (c 1977) vi, 154p.

- Hansen, Morris H. and others. *Sample survey methods and theory, 2V. V1 Methods and applications. V2 Theory*. New York, Wiley (c 1953) xxii, 638p.

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- Holmberg, Borje. *Distance education: A survey and bibliography*. London, Kogan Page (c 1977) 167p.

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- Hurt, H. Thomas and others. *Communication in the classroom*. Massachusetts, Addison-Wesley (c 1978) vii, 215p.

- Kolesnik, Walter B. *Motivation: Understanding and Influencing Human Behaviour*. Boston, Allyn and Bacon (c 1978) ix, 328p.

- Korda, Michael. *Success*. London, Hodder and Stoughton (c 1977) 258p.

- Lapati, Americo D. *Education and the Federal Government: A historical record*. New York, Mason/Charter, 1975. 388p.

- Miller, Harry L. *Social foundations of education: An urban*

- focus*, Ed 3. New York, Holt, Rinehart and Winston (c 1978) vii, 407p.

- Paish, Wilf. *Track and field athletics*. London, LEPUS (c 1976) 266p.

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- Raghavarao, Damaraju. *Constructions and combinatorial problems in design of experiments*. New York, Wiley (c 1971) xv, 386p.

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- Sagan, Carl. *Dragons of Eden: Speculation on the evolution of human intelligence*. London, Hodder and Stoughton (c 1977) 263p.

- Schumacher, E.F. *Guide for the perplexed*. New York, Harper and Row (c 1977) 147p.

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- Solmon, Lewis C. and others. *College as a training ground for jobs*. New York, Praeger (c 1977) xiii, 183p.

- Srivastava, R.C. and Bose, K. *Theory and practice of teacher education in India*. Delhi Chugh (c 1978) x, 344p.

- Stephens, James C. *Managing, complexity: Work, technology, resources and human relations*. Maryland, Lomond (c 1977) xi, 331p.

- Sutcliffe, Peter. *Oxford University Press: An informal history*. Oxford, Oxford University Press (c 1978) xi, 303p.

- Unesco. *Economics of New educational media: Present status of research and trends*. Paris, Author, 1977. 200p.

- Unesco and International Association of Universities. *Life-long education and university resources*. Paris, Author (c 1978) 193p.

- Wald, Abraham. *Sequential analysis*. New York, Wiley (c 1947) xii, 212p.

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RABINDRA BHARATI UNIVERSITY Calcutta-700007

Employment Notification No. RB/34 (X)
Applications are invited for the following posts:

- (1) Professor of History—(Amended Advertisement)
- (2) Reader in Medieval Bengali Language and Literature
- (3) Director of University Museum
- (4) Development Officer of the University

Qualifications

For Professor: Essential

(a) A Doctorate Degree or Research work of outstanding merit (b) Publications of merit (c) Consistently good academic record with an aggregate of more than 54% marks (d) Experience of teaching postgraduate classes for not less than ten years and ability to guide research work.—Those who applied in response to previous notification No. RB/32(X) need not apply again, as their cases will also be considered).

For Reader: Essential

Good academic record with Doctorate Degree or equivalent published work, Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials. About five years' experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position. This condition may be relaxed in the case of candidates with outstanding research work. Desirable: Ability to guide research students. Note: Special requirements for this post would be ability to understand and expound Medieval Bengali Music. The candidate need not necessarily be a performer but should be able to help inter-disciplinary programme of the University.

For Director of Museum: Essential

(a) Master's Degree of a recognised University in Ancient Indian History/Modern Indian History/Bengali Literature or Fine Arts; (b) Ten years' experience as a Curator in a Museum of Standing (c) Knowledge of Indian Arts and Decorative Arts (documentary evidence to be produced).

Desirable

(a) Diploma or Degree in Museology of a recognised University; (b) Acquaintance with the working of Museum of other countries.

Age

Not exceeding 50 years.

For Development Officer: Essential

An M.A. with good academic record; at least five years' experience in University administration or university teaching: The incumbent will be required to deal with university matters in relation to the University Grants Commission and generally to assist the Vice-Chancellor. Evidence of organisational ability will be an additional qualification.

Age: Not exceeding 45 years, relaxable in special cases.

Any of the above qualifications for the posts may be relaxed at the discretion of the Selection Committee.

Other things remaining equal, preference will be given to the candidate belonging to Scheduled Castes/Tribes.

Selection of the Posts No. 1 and 3 need not be confined to applicants only.

Scale of Pay

for Professor: Rs 1500-60-1800-100-2000-125/2-2500

for Reader: Rs 1200-50-1300-60-1900.

for Director of Museum

Rs 1200-50-1300-60-1900.

for Development Officer

Rs 1100-50-1600

plus usual allowances and other benefits as per university rules.

Higher initial pay may be allowed in deserving cases.

Four copies of applications in prescribed forms (available from the University office, Jorasanko Complex) together with attested copies of Mark-sheets from Matriculation/S.F./H.S. onwards and a non-refundable fee of Rs. 5/ by crossed Indian Postal Order payable to RABINDRA BHARATI should reach the Registrar by January 6, 1979.

Incomplete applications are liable to be rejected.

D.C. Ghose
REGISTRAR

HARYANA AGRICULTURAL UNIVERSITY Hissar

Advertisement No. 8/78

APPLICATIONS invited for following posts. Higher start outstanding qualifications, experience and achievements. Benefits of Contributory Provident Fund and leave etc. according to University Rules. Applications of the candidates already in service must reach through proper channel upto the fixed date. Applications on prescribed form (obtainable free by sending self-addressed unstamped envelope size 23 x 10 cms. to Assistant Registrar (R), HAU, Hissar) accompanied by prescribed fee of Rs. 10/- in the form of Crossed Postal Order in the name of Assistant Registrar (R), HAU, Hissar payable at Hissar Post Office, should reach Registrar by 1.1.1979. The envelope containing application must be superscribed as "APPLICATION FORM FOR THE POST OF——"

1. Dean College of Home Science

(Rs. 1500- 60- 1800- 100- 2000- 125/2-2500).

(i) Second class B.Sc. in Home Science or B.Sc. (ii) Second class M.Sc. in any branch of Home Science. (iii) Ph.D. in any branch of Home Science. (iv) Ten years' experience of teaching/research/extension in Home Science College or Institute out of which atleast five years should be as Associate Prof. or of equivalent rank. (v) Administrative experience in a responsible teaching or research post for 5 years. (vi) Estab-

lished reputation for initiative, leadership and ability to organise, coordinate and supervise the activities of others.

2. Professor of Pharmacology

(Rs. 1500- 60- 1800- 100- 2000- 125/2-2500).

Essential

(i) Second class B.V.Sc. degree. (ii) Second Class M.V.Sc. in Pharmacology. (iii) Ph.D. in Vety. Pharmacology. (iv) Atleast ten years' experience of teaching and research in Vety. Pharmacology out of which 5 years should be as Associate Professor or of equivalent rank and evidence of having conducted independent research and published its results in Scientific journals of repute. (v) Capacity for organization as Head of Section or Department of a Teaching or Research Institute.

Desirable

Advanced training in Physiological Chemistry/Toxicology.

3. Agronomist (Cotton)

(Rs. 1200-50-1300-60-1900).

Essential

(i) Second class B.Sc. (Agr.). (ii) Second class Master's degree in Agronomy. (iii) Ph. D. in Agronomy (iv) Atleast 5 years experience of teaching/research/extension, preferably on cotton.

Desirable

Knowledge of modern statistical methods in field experimentation.

4. Agronomist (Bajra)

(Rs. 1200-50-1300-60-1900).

Essential

(i) Second class B.Sc. (Agr.). Second class Master's degree in Agronomy. (iii) Ph.D. in Agronomy. (iv) Atleast five years experience in teaching/research/extension, preferably on Bajra.

Desirable

Knowledge of modern statistical methods in field experimentation.

5. Agronomist (Sugarbeet)

(Rs. 1200-50-1300-60-1900).

Essential

(i) Second class B.Sc. (Agr.). Second class Master's degree in Agronomy. (iii) Ph.D. in Agronomy. (iv) Atleast five years experience of teaching/research/extension, preferably on sugarbeet.

Desirable

Knowledge of modern statistical methods in field experimentation.

6. Research Scientist (Sheep Breeding)

(Rs. 1200-50-1300-60-1900).

Essential

(i) Second class B.Sc. (An. Sc.)/B.V. Sc./B.V.A.Sc./B.Sc. (Agr.). (ii) Second class M.Sc. in Animal Breeding. (iii) Ph.D. degree in Animal Breeding. (iv) Five years experience of teaching/research/extension in animal breeding.

Desirable

Experience in modern methods of sheep breeding and management.

7. Associate Professor of Foods & Nutrition

(Rs. 1200-50-1300-60-1900).

Essential

(i) Second class B.Sc./B.Sc. Home

Science/ B.Sc. (Agri.)/ B.V.Sc./ B.Sc. Animal Science. (ii) Ph.D. in Foods & Nutrition or equivalent qualifications. (iii) Five years' experience of teaching/research/extension in Foods & Nutrition. (Note: Qualification No. (iii) relaxable in the case of candidates otherwise outstanding.)

Note

1. For posts at Sr. Nos. 1 and 3 to 7, one or more of the Essential qualifications relaxable for candidates with outstanding attainments/experience.
2. For post at Sr. No. 2, qualifications are relaxable if persons with requisite experience/qualifications are not available.
3. For posts at Sr. Nos. 3 to 7, special weightage will be given to extension experience possessed by the candidates.

REGISTRAR

HIMACHAL PRADESH UNIVERSITY

Recruitment Branch

Simla-171005

Advertisement No. 6/78

Applications are invited for the post mentioned below:

Planning and Development Officer

In the pay scale of Rs. 1200-1900 plus usual allowances as admissible under the University rules.

Essential Qualifications

At least High Second Class M.A. Degree with 10 years teaching and/or Research in College/University of which at least 5 years should be administrative experience in a responsible capacity.

Experience

Capability of Planning different development schemes in College/University and having upto-date knowledge of Indian Education and Planning Scene and familiarity with the working of current U.G.C. schemes in the field of College/or University.

Desirable

Preference will be given to those having M.A. in Economics/Statistics/Education and Diploma in Planning.

Applications should be made on the prescribed form obtainable from the Registrar by sending a self-addressed stamped envelope (size 23 x 10 cms.) and applications complete in all respect together with a crossed postal order of Rs. 10/- (Rs. 5/- for S.C./S.T.). (Not applicable in case of those applying from outside India), drawn in favour of the Finance Officer, Himachal Pradesh University, should reach the undersigned by 5th Jan. 1978 positively. Incomplete applications and whose received after the due date may not be entertained. Applicants already in service should send their applications through their employers.

K.D. Gupta
REGISTRAR

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY

Andhra Pradesh

Hyderabad-500 028

Admission Notice for B. Tech. Part-Time Degree Course for Diploma Holders 1978-79

Applications are invited from Diploma Holders with 1 year experience in the concerned field in Civil, Electrical, Mechanical or Electronics & Communication Engineering for admission to First Year of the Four Year Part-time Degree Course leading to B.Tech. Degree of this University at:

College

(i) Nagarjunasagar Engineering College, Hyderabad-500488.

Courses offered

Civil, Electrical, Mechanical & Electronics & Communication Engineering.

(ii) Engineering College, Kakinada-533003.

(iii) Engineering College, Anantapur-515002.

Courses offered

Civil Electrical and Mechanical Engineering.

*Note: The admission to Electronics & Communication Engineering Course will be subject to approval of Government for starting this course at Nagarjunasagar Engineering College, Hyderabad.

The Application forms and prospectus for admission to the Courses may be obtained from the Principals of the respective Colleges where they desire admission on payment of Rs. 5/- (Rs. five only) by Crossed Postal Orders in favour of "Registrar, Jawaharlal Nehru Technological University, Hyderabad-500028, payable at the J.N.T.U. Post Office Hyderabad". Requisition for application forms should be accompanied by a self-addressed envelope of size 25.5 cm. x 10 cm. with Re. 1/- Postal Stamp affixed to it. Postal Orders issued on or after 4.12.78 only will be accepted.

The last date for the receipt of filled application form is upto 5 p.m. on 5th January, 1979 by the respective Principals. Application forms will be issued by the respective Principals from 5th December, 1978.

Dates of Entrance Examination

3rd February, 1979 Forenoon: Mathematics, Afternoon: Physics.

4th February, 1979 Forenoon: Chemistry, Afternoon: Engineering Subject.

REGISTRAR

THE UNIVERSITY OF BURDWAN

Rajbati : Burdwan

West Bengal

Advertisement No. 8/78-79

Dated 7th December, 1978.

Applications in the prescribed form are invited for the following posts:

A. Lecturers (2) for the Department of Physics—in the scale of Rs. 700-40-

1100-50-1600/- with allowances and other benefits according to University Rules.

B. Part-time Lecturers (3) for the Department of Commerce—Rs. 150/- per month plus consolidated Traveling Allowances according to University Rules.

Minimum Qualifications

1. (a) A Doctor's Degree or published research work of an equally high standard and

(b) Consistently good academic record with First or high Second Class (B in the seven point scales) Master's Degree in the relevant subjects or an equivalent degree of a foreign University.

Specialisation or Proficiency Required

For A : For the first post—X-ray Crystallography

For the Second post—Experimental Nuclear Physics.

For B : For the first post—Labour Laws

For the other two posts—Trade Unionism/Employee Welfare/Industrial Relations/Wage and Salary Administration.

The University Council may, on recommendation of the appropriate Selection Committee, waive any of the requirements in view of the candidate's specialised knowledge in the subject. The choice of the Committee may not necessarily be confined to those who apply formally.

For application form and other information apply to the Registrar with a self-addressed stamped (o. 40p.) envelope (9" x 4").

Last date for submission of application with the requisite fee of Rs. 5/- is 25th December, 1978.

A. K. Chaudhuri
REGISTRAR

ALIGARH MUSLIM UNIVERSITY

Aligarh

Advertisement No. 24/78-79

Applications, on the prescribed form, are invited for the following posts:

Candidates must possess Medical Qualifications, included in Ist or 2nd schedule or part II of the 3rd Schedule (other than licentiate qualifications) of the Indian Medical Council Act, 1956. Holders of educational qualifications included in Part II of 3rd schedule should fulfil the conditions stipulated in Section 13(3) of the Indian Medical Council Act, 1956. Must possess a basic University or equivalent qualification entered in Schedules under State/Central Medical Registration Act. For the post at S. No. 1.

1. Reader in Microbiology (Mycology), Scale Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications

M.D. (Bacteriology)/M.D. (Microbiology)/M.D. (Bacteriology with Pathology)/M.D. (Pathology & Bacteriology) / M.Sc. (Bacteriology) / M.Sc. (Microbiology)/Ph.D. (Bacteriology)/Ph.D. (Microbiology)/D.Sc. (Bacteriology)/D.Sc. (Microbiology)

As Assistant Professor/Lecturer in Bacteriology for three years in a Medical College.

Desirable:

Published work in Mycology.

2. Readers in Botany (one likely to become permanent and two purely temporary Scale of Rs 1200-50-1300-60-1900 plus allowances.

Qualifications Ordinarily required

(a) A first or a high second class Master's Degree in the subject concerned of an Indian University or an equivalent foreign qualification (b) A research degree of a doctorate standard or published work of a high standard; and (c) At least five years experience of teaching postgraduate classes and some experience of guiding research.

Desirable; For post likely to become permanent. Specialization in the fields of (i) Anatomy or (ii) Embryology and Experimental Embryology of plants.

3. Reader in Botany, Women's College (Post temporary), Scale Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications Ordinarily required

(a) A first or a high second class Master's Degree in the subject concerned of an Indian University or an equivalent foreign qualification (b) A research degree of a doctorate standard or published work of a high standard; and (c) At least five years experience of teaching Postgraduate classes and/or five years teaching experience of undergraduate classes.

4. Lecturers in Botany (Four posts—one likely to become permanent and others

purely temporary) scale Rs. 700-40-1100-50-1600 plus allowances.

Qualifications

A Doctor's Degree or research work of an equally high standard; and (b) consistently good academic record with 1st or high 2nd Class (B in the seven point scale) Master's Degree in a relevant subject or an equivalent degree of a foreign University.

Having regard to the need for developing interdisciplinary programmes, the Degrees in (a) and (b) above may be in relevant subjects.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard; it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable; a person possessing a consistently good academic record (weightage being given to M.Phil. or equivalent degree or research work of quality) may be appointed. Provided he has done research work for at least two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's Degree or give evidence of research work of equivalent high standard within five years of his

appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

5. Student Counsellor (Psychology Department), Scale Rs 650-30-740-35-880-EB-40-960 plus allowances.

Qualifications

(a) At least first or a high second class Master's Degree in Psychology or equivalent foreign qualification. (b) Diploma in Educational and Vocational Guidance.

Desirable

Research degree of M.Phil level and at least three years' experience of working in a Guidance and Counselling Centre.

Prescribed application forms and instructions may be had from the Deputy Registrar (Executive) either personally or by sending a self-addressed envelope of 23 x 10 cm. Last date for receipt of applications is 29th December 1978. Incomplete applications and those received late may not be considered.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T.A. equal to one single Second Class Railway fare only.

Jamalur Rahman
REGISTRAR

Teaching & Testing Language/Literature by Objectives (Continued from page 1311)

- d) strong attraction of the participants for each other
- D) The speaker of the poem is primarily describing his
 - a) plans
 - b) past experiences
 - c) feelings
- 4) What is the significance of planting trees in line 3?
- 5) Mention the deviant nominal group in the collocation **silence, space and strangers**.
- 6) What is the referent of the pronominal item we in line?
- 7) The nominal item neglect in line 5 stands in _____ relationship with disuse in line 2.
- 8) The negative particle in the qualifiers **unswept** and **unmown** marks the cessation of an activity. Explain the kind of awareness shown by the poet in the use of the items. Answer in 50 words.
- 9) The nominal items **time, agents, silence, space, and strangers** are divergent on the formal level. Show how the poet has set up a semantic inter-relationship between them. Answer in 50 words.

The teacher may choose lecture, lesson, discussion, seminar, assignment (class or home) as methods of teaching. A change in activity in the classroom interaction is usually useful. The test items, carefully pre-validated according to rational and scientific criteria, can be used for purposes of formative

evaluation, identifying teaching weaknesses and success, and helping students to identify their weaknesses. They must be many and of different types; they must satisfy the following general criteria:

- i) an item must be concerned with important content area;
- ii) it must measure an important learning outcome;
- iii) the level of difficulty must be appropriate to the level of learning etc.

For the planning of tests for summative and formative evaluation a planning in terms of relative weightage to different content areas, type of items/questions according to the abilities being tested, and time is required. Multiple choice/facet items are the most suitable of the objective type items for testing higher order abilities. By objective items is implied the items that can be marked objectively. Of course, some direct, short answer and long answer questions can be used, but the element of subjectivity in evaluation, maximum at the level of long answer questions, is bound to be there.

Two important points may be made about the testing of linguistic skills and literature. There are certain skills, e.g. driving, swimming cycling, in which the tests that allow us to measure them are identical. But a test used to measure proficiency in languages is only a job sample and not identical to the skill test.

The second point is concerning the level of mastery to be expected in non-objective type tests. Opinions here are varied and the element of subjectivity is unavoidable. However, a certain scheme of categories may be kept in mind to evolve criteria (refer to the table). □

GURU NANAK DEV UNIVERSITY

Amritsar

Advertisement No. 23/78

Applications are invited for the following posts on prescribed form obtainable (free of cost) from Office of the Registrar, Guru Nanak Dev University, Amritsar by making written request accompanied by self addressed stamped envelope of 23 x 10 cms. so as to reach this office by **15.1.1979** along with crossed Indian Postal Order (s) for Rs. 7.50 for posts at Sr. No. 1 to 3 and Rs. 5 for posts at Sr. No. 4 to 7 drawn in favour of Registrar, Guru Nanak Dev University, Amritsar. Application fee is not refundable.

Note: Persons already in employment must send their applications through their employer.

Grade: (plus allowances as admissible under University rules)

1. Readers (Rs. 1200-50-1300-60-1900) in Economics; 2 and in Punjabi: 1.
2. Lecturers in Economics: 2 posts (Rs. 700-40-1100-50-1600)
3. Director Physical Education (Rs. 700-50-1000/50-1250)
4. Stenographers in Punjabi (Rs. 225-15-360/20-500)+Rs. 40 as a Special Pay.
5. Technician for Operating Photo Copying Machine (temporary) (Rs. 145-7-180-12-300).
6. Artist for Biology Department (Rs. 145-7-180-12-300)
7. Research Fellow in English (Rs 400 p.m. fixed)

Qualifications

For Posts at Sr. No. 1: Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

About five years experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position. This condition may be relaxed in the case of candidates with outstanding research work.

Note: Knowledge of Panjabi and a foreign language other than English will be an additional qualification.

Specializations for the posts of Readers in Economics: Industrial Economics/Economics of Labour/Economic Growth and Public Finance/Economic Statistics/Monetary Theory and policy/Indian Economic Problems.

For posts at Sr. No. 2: (A) A Doctor's degree or research work of an equally high standard; and (B) Consistently good academic record with 1st or high 2nd Class (B in the seven point scale) Master's degree in a relevant subject or an equivalent degree of a foreign University.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (B) above.

Provided further that if a candidate possessing a Doctor's degree of equivalent research work is not available or is not considered suitable, a person possessing a consistently good academic record (weightage being given to M.Phil or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research Laboratory/Organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Explanation

Candidates for being eligible for recruitment to the posts of Lecturers must have a 1st or High 2nd Class (B in seven point scale) at the Master's level and for determining consistently good academic record, average of 50-55% may be expected at the two examinations prior to the Master's degree examination.

Note: Knowledge of Panjabi and a foreign language other than English will be an additional qualification.

Specialization

Public Finance/Economics of Labour/Industrial Economics/Monetary Theory and Policy/Economics Statistics/Economic History and Economic Thought. Preferable: Good grounding in Economic theory and quantitative methods.

For post at Sr. No. 3: (i) At least

ANDHRA UNIVERSITY Waltair

Advertisement No. V/78

Applications in the prescribed form are invited for the following posts so as to reach the Registrar, Andhra University, Waltair on or before **2-1-'79**.

S. No.	Subject	Reader	Lecturer
1.	Chemistry	—	1* 1 (Microanalyst)
2.	Commerce	2	—
3.	Management Studies (M.B.A. Programme)	1	—
4.	Botany	—	1*
5.	School of Correspondence courses		
	i. Commerce	2 (Deputy Director)	1 (Asst. Director)
	ii. Economics	1 (Deputy Director)	1+1* (Asst. Director)

* Temporary vacancy.

Scale of Pay

Reader: Rs. 1200-50-1300-60-1900

Lecturer Rs. 700-40-1100-50-1600

Deputy Director)

Rs. 700-50-1250)

Asst. Director)

Rs. 400-40-800-50-) Non-D.A.

950) merged scale

Micro-Analyst) Likely to be

Rs. 400-40-800-50-) revised.

950)

The rule of the reservation for SC/ST/BC candidates is applicable for the posts of Lecturers/Asst. Director/Micro-Analyst.

The details of qualifications prescribed, precise branch of specialisation and preferential qualifications considered desirable for the posts, will be furnished alongwith the application form.

Requisitions for the application forms

Second Class Master's degree in Physical Education with at least 50% marks or M.A., D.P.E. with 50% marks in M.A. or D.P.E. or, an equivalent degree. (ii) 10 years teaching or administrative experience in a college/University of teaching/or organising inter-collegiate sports. (iii) qualified/efficient in coaching one or two major games. (iv) Age between 30 to 50 years.

Preferable: Inter-University/State/National representation in a game or sports.

For posts at Sr. No. 4: (i) At least B.A./B.Sc. (ii) 5 years experience as Junior Scale Stenographer/Steno-typist in an institution of repute. (iii) Short-hand minimum speed 100 w.p.m. and type-writing speed 40 w.p.m. (iv) Knowledge of Panjabi upto Matric Standard.

For posts at Sr. No. 5: Matriculation and I.T.I. Certificate in Electrician trade.

Note: Higher start may be given to deserving candidates.

For post at Sr. No. 6: Higher Secondary or equivalent with Diploma in Fine Arts.

For post at Sr. No. 7: At least 2nd Class Master's degree in English with consistently good academic record; (ii) Aptitude for research.

Additional: Knowledge of a European Language other than English.

**Mohinder Singh Randhawa
REGISTRAR**

Each application shall be accompanied by a crossed Indian Postal Order for Rs. 10 (Rupees ten only) or a Bank receipt remitting that amount in the State Bank of India to the credit of A.U. General Account (Ordinary) towards the Registration fee for the application.

may be made to Sri P. Hanumantha Rao, Joint Registrar, Andhra University, Waltair accompanied by a self addressed and stamped envelope and a State Bank of India challan or a Crossed Indian Postal Order for one Rupee. The University reserves the right to fill or not to fill all or any of the posts. The University also reserves the right to fill all or any of the higher cadre posts by appointing persons in lower cadre, if suitable candidates are not available for appointment to higher cadre posts.

The cover containing the applications should be superscribed as "APPLICATION FOR THE APPOINTMENT TO THE POST OF ———".

**M. Gopalakrishna Reddy
REGISTRAR**

22/13/78



Returning
on our fast,
non-stop flights
can be a delightful treat. You get
more time in London, or arrive
home earlier. Twice a week from
London to Delhi, and then to
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Four times a week.**

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